REQUEST FOR BID

ANNUAL CONTRACT FOR GENERAL PIPE WORK

BID ID: 2024-PME-22

July 2024

CLAYTON COUNTY WATER AUTHORITY
1600 Battle Creek Road
Morrow, GA 30260

Bid Opening:
Virtual Teams Meeting: **Tuesday, August 27, 2024, at 2:00 p.m.(local time)**

Non-Mandatory Pre-Bid
Virtual Teams Meeting: **Tuesday, August 13, 2024, at 2:00 p.m. (local time)**

This solicitation has a SLBE BID DISCOUNT

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Attachments

Addenda

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 General Pipe Work**

The Clayton County Water Authority will open sealed bids from licensed utility contractors via a virtual Teams meeting, at its office located at 1600 Battle Creek Road, Morrow, Georgia 30260, on **Tuesday, August 27, 2024, at 2:00 p.m. (local time)** for General Pipe Work. Any bids received after the specified time will not be considered.

Please note this bid will be evaluated based on a selected work items list. If you would like to obtain a copy of this list please send an email to ccwa_procurement@ccwa.us by **Tuesday, August 27, 2024, at 12:00 p.m.**

A Non-Mandatory Pre-Bid Virtual Teams Meeting will be held on **Tuesday, August 13, 2024, at 2:00 p.m. (local time)**.

To attend both the **Pre-Bid** and the **Bid Opening** virtual meetings, please use the following call-in instructions:

Microsoft Teams Meeting
Toll number: +1 912-483-5368
Conference ID: 704 018 780#

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

To promote responsible environmental practices, the bid package is available in electronic format (Adobe PDF) and can be requested via email to ccwa_procurement@ccwa.us.

A hardcopy bid package can also be requested at a cost of $25.

Clayton County Water Authority
By: Dr. Cephus Jackson, 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 with up to two (2) experienced licensed utility Contractors to complete work on gravity-flow pipe systems and pressure-flow pipe systems.

CCWA is implementing a 10-year strategic master plan that has a large focus on replacement and renewal of our water, sewer and stormwater pipelines. A substantial portion of the nearly $14 million per year of planned work on these projects are executed through our annual service pipe contracts, including this contract. CCWA anticipates the annual value of work to be completed through this contract will be in the range of $2.5 to $3.5 million dollars and be continuous throughout the term.

Emergency repairs should be expected.

The CCWA intends to award a Primary contract, as well as a Back-Up contract. 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 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. CCWA reserves the right to complete similar work under other contracts.

The successful contractor(s) must employ their own personnel who perform no less than seventy-five percent (75%) of all labor to install pipe work.

Additionally, CCWA reserves the right to negotiate parity for all costs.

The initial term of this contract will be for twelve (12) months. CCWA has the option to renew the contract for up to four (4) additional 12-month periods by mutual written consent from both parties.

2.2 Example Work

To help the bidder understand the type of work anticipated under this contract, examples of work orders and drawings are included. See Water Pipeline Example Work and Sewer Pipeline Example Work provided with this document.

Division 1 General Information

Section 2: General Overview

2.3 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 each bidder with two Typical Jobs. A Typical Job is a list of "selected work items" and "quantities" that represent a typical job of this contract, specifically for "Water and Sewer". 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 of the two Typical Jobs 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 ensure 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.

Small Local Business Enterprise (SLBE) bid discount: This procurement has a SLBE bid discount for evaluation purposes only, which will be given to CCWA certified SLBE primes only. For more details, please refer to Division 2, Section 8 of this bid package.

2.4 Addendum

Bidders may submit questions regarding this bid prior to the bid opening. To be considered, all questions must be received in writing via email at **CCWA_Procurement@ccwa.us** by **Thursday, August 15, 2024, at 2:00 p.m. (local time)**. 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.

Division 2 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 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 sixty (60) 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 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.

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.

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.

Division 2 Bid Requirements

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 Contractors and any potential CCWA approved Subcontractors will provide minimum insurance coverage and limits as per the following:

The Contractor/Subcontractor will file with the Clayton County Water Authority (the "Authority") Certificates of Insurance, certifying the required insurance coverage and stating that each policy has been endorsed to provide a minimum of thirty (30) day advance written notice to the Authority in the event of cancellation, material change, or nonrenewal of policies required under the contract to the Authority. All bonds and insurance coverage must be placed with an insurance company approved by the Authority, licensed, or approved to do business in the State of Georgia, and rated Secure ("A-", "VII" or better) by A.M. Best's Insurance Guide throughout the duration of the contract. The letter denotes the company's financial strength, and the Roman numeral represents the financial size of the carrier. 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. The insurer shall agree to waive all rights of subrogation against the Authority, its elected or appointed officers, officials, agents, authorized volunteers, and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the Authority, but this provision applies regardless of whether the Authority has received a waiver of subrogation from the insurer.

As the Risk Management Requirements herein are minimum required insurance coverage and limits, the Authority's Risk Manager may require additional and/or increase in coverage and limits driven by the complexity of the relevant contract.

The Authority requires insurance on an "occurrence" basis whenever possible. Policies written on a "claims made" basis (e.g. cyber, professional liability and pollution liability) require the inclusion of the following provisions:

(a) The retroactive date must be shown on the certificate of insurance (or provided a copy of the declarations page showing it).

(b) Insurance must be maintained for at least two (2) years after completion of the work and/or contract.

(c) If coverage is canceled or non-renewed after the work has been completed and/or the contract has ended, the contractor/subcontractor must purchase the extended reporting period for at least two (2) years.

Division 2 Bid Requirements

Section 2: Risk Management Requirements

APPLICABLE TO ALL CONTRACTS	AS APPLICABLE (Marked with an "X")

Worker's Compensation – Required for all contracts, including any sole proprietor, individual consultants, or small businesses. Worker's Compensation coverage on a statutory basis for the State of Georgia with an Employer's Liability MINIMUM limits of $500,000 bodily injury for each Accident, $500,000 bodily injury for each Disease, and $500,000 bodily injury by Disease for each Employee. Other States: If any work is performed out of state including any remote workers, then those states must be covered as well. Maritime endorsements: If there is an exposure of injury to any contractors or providers to any maritime exposures then coverage shall include the appropriate endorsements such as USL&H (United States Longshore and Harbor Workers Comp Act), Jones Act or other federal statutes. Waiver of subrogation: The insurer agrees to waive all rights of subrogation against the Authority, its elected or appointed officers, officials, agents, authorized volunteers, and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the Authority, but this provision applies regardless of whether or not the Authority has received a waiver of subrogation from the insurer. An umbrella policy may increase the employer's liability limits to meet the minimum requirements.

Commercial General Liability – Required for all contracts. Coverage to be provided on "occurrence" not "claims made" basis. The coverage is to include Contractual liability, Per Project Limit of Liability and 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

☐ **Crime Liability** – Required for all contracts involving any use, care, custody, or control of any cash, money, securities, and/or wire transfers. Any use of crypto currencies must be pre-approved by the Risk Management Department.

☐ **Cyber Liability** – Required for all software, computer hardware installation, data access, data integrations, data usage, cloud storage, SaaS, and or technology related contracts. Coverage shall include the minimum: a) Information Security & Privacy Liability; b) Regulatory Fines and Penalties; c) Payment Card Industry (PCI) if credit cards and/or banking information is obtained or accessed, and d) Ransomware. Since cyber insurance policies are written on a claims-made basis, insurance must be maintained for at least two (2) years after completion of the work and/or contract.

☐ **Professional Liability Insurance (Errors & Omissions)** – Required for all professional service contracts. This shall include any consultants, medical, legal, technical, insurance agents, or other professions that require proper licenses. Since professional insurance policies are written on a claims-made basis, insurance must be maintained for at least two (2) years after completion of the work and/or contract.

☐ **Terrorism Liability** – Required on specific contracts stated by the Risk Management Department including but not limited to: 1) all contracts involving access or use of any water, gas, electric utilities shall require third parties to have TRIA and third-party liability limits of at least $5,000,000; and 2) all special events that are highly visible, politically sensitive, or have more than 1,000 attendees should require at least $1,000,000 of terrorism liability for any event sponsors.

Division 2 Bid Requirements

Section 2: Risk Management Requirements

APPLICABLE TO ALL CONTRACTS	AS APPLICABLE (Marked with an "X")

completion of work. The general aggregate and products & completed operations aggregate should be at least twice the minimum required occurrence limit. Policy shall be written on an Insurance Services Office (ISO) industry form CG0001 2010 or newer. Contracts involving any youths or children under 18 should also be required to provide proof of coverage for sexual abuse & molestation coverage that it is either; clearly not excluded on the general liability or purchased as a stand-alone policy. Should the coverage be on a claims-made basis, insurance should remain in force for the life of the contract and up to the date to which the youngest youth/child at the start of the contract turns age 18 plus two years.

Automobile Liability – Required for all contracts except for products or services that are remote only or are delivered by a professional delivery service. ISO policy form CA0001 or its equivalent liability coverage. Coverage shall be included for any owned, leased, hired, or non-owned autos (ISO symbol 1 is preferred). For any contracts involving the transportation of hazardous materials, limited pollution endorsement ISO form CA9948 or its equivalent shall be on the policy. Sole proprietors shall provide the same limits as stated above via a personal auto policy plus an umbrella. Uninsured motorist coverage should be equal to the per occurrence limit except for contracts with other governmental entities.

☐ **Aviation Liability** – Required for all Drones/UAV (Unmanned Aerial Vehicles), general aviation contracts, and Fixed base operators (FBO). Coverage should include owned, hired, and non-owned aircraft/aviation.

☐ **Liquor Liability** – Required for all third-party services and contracts involving selling, distributing, or serving alcohol. Coverage should be full liquor liability and not "host" liquor if it is being sold.

☐ **Sexual Abuse & Molestation Liability** – Required for all contracts and services involving youths, children, special needs, or senior citizens. Must be maintained for at least two (2) years after completion of the work and/or contract.

☐ **Builder's Risk** – Recommended for most construction projects. The limit of coverage should be equal to the value of the contract or GREATER. Covered perils should be at least fire, wind, theft, vandalism, flood, and earthquake.

☐ **Umbrella Liability** – Recommended for all contracts. 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. The underlying coverage shall be General Liability, Automobile Liability, and Employers Liability (Workers Compensation). Concurrent policy dates with primary liability policies except for Workers Compensation.

MINIMUM LIMITS OF LIABILITY ON NEXT PAGE

Division 2 Bid Requirements

Section 2: Risk Management Requirements

MINIMUM LIMITS OF LIABILITY

INSURANCE	COVERAGE	LIMIT
Worker's Compensation	Bodily Injury by Accident - Each Accident	$500,000
	Bodily Injury by Disease – Each Disease	$500,000
	Bodily Injury by Disease – Each Employee	$500,000
Commercial General Liability	General Aggregate	$2,000,000
	Products & Completed Operations Aggregate	$2,000,000
	Each Occurrence	$1,000,000
	Personal & Advertising Injury	$1,000,000
	Damages to Premises / Fire Legal	$500,000
	Medical Payments	$5,000
Automobile	Combined Single Limit OR	$1,000,000
	Per Person	$500,000
	Per Occurrence	$500,000
	Property Damage	$100,000
	Medical Payments	$1,000
Crime	Employee Dishonesty	$1,000,000
	Funds Transfer Fraud	$1,000,000
	Money & Securities	$100,000
	Computer Crime	$1,000,000
	Social Engineering or its equivalent	$100,000
Cyber Insurance	Each Claim/Wrongful Act	$1,000,000
	Annual Aggregate	$2,000,000
	Business Interruption	$1,000,000
	Data Recovery	$1,000,000
	Cyber Extortion Expenses	$500,000
	Cyber Extortion/Ransom Payments	$50,000
Professional Liability	Each Claim/Wrongful Act	$1,000,000
	General Aggregate	$2,000,000
Terrorism	Access/use of water, electric or gas utilities	$5,000,000
	Special events	$1,000,000
Aviation	Each Occurrence	$5,000,000
	Automobile Liability	$1,000,000
	Pollution Liability (FBOs Only)	$1,000,000
Liquor	Each Occurrence	$1,000,000
	General Aggregate	$2,000,000
Sexual Abuse & Molestation	Each Claim/Wrongful Act	$1,000,000
	General Aggregate	$2,000,000

END OF SECTION

Division 2 Bid Requirements

Section 3: Required Bid Submittals

3.1 Bid Submittal Requirements:

The following items are required to be included as part of your bid response:

A. **Bid Form – Pay Item Schedule**. *Bidders must submit a hard copy of their completed and signed Bid Form, as well as an electronic copy in MS Excel on a flash drive. Bidders are responsible for submitting their electronic version on their self-provided flash drive. CCWA will provide the Excel file upon requests emailed to ccwa_procurement@ccwa.us. In case of any discrepancies between the hard copy version and the electronic version, the hard copy version will govern.* ❑

Due to the volume of the Bid Form items, no bid amounts will be read out loud at the bid opening; however, copies of the paper submittals will be provided upon request.

B. **Bidder Qualification Information** Form, including **References**. ❑

C. **Georgia Security and Immigration Compliance Act of 2006 form.** ❑

D. **Contractor Affidavit and Agreement form.** ❑

E. **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.

F. **CCWA SLBE Certificate and/or required SLBE Forms (as applicable)**. *An indication of "N/A" for "not applicable" must be noted as appropriate.* ❑

G. **Non-Collusion Certificate.** ❑

H. **Certification of Absence of Conflict of Interest.** ❑

I. Prime Bidders must provide a copy of their **Utility Contractor's License**. ❑

J. **Vendor Information Form**. Company name must match the W-9 Form. ❑

Division 2 Bid Requirements

Section 3: Required Bid Submittals

K. **W-9 Form**. *Company name must match the Vendor Information Form and must be registered with the Georgia Secretary of State.* ❑

L. Any other items as required in this RFB including but not limited to the items contained in the Instructions to Bidders, Bidder Qualification Information Form, Bid Form, and Specifications Sections. ❑

M. **All addenda issued**. ❑

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 General 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.

CONTRACT EXECUTION AND BONDS:

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.

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 Pay Item Schedule.

ADDENDA:

Bidder acknowledges receipt of the following Addenda:

_____

__

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.

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
1	Mobilization	Lowboy Service	EA	
2	Mobilization	Emergency	EA	
3	Performance and Payment Bonds	For Project Work Orders of $100,000 to $125,000	EA	
4		For Each Additional $25,000 Increase	EA	
5	Construction Exit	N/A	EA	
6	Sediment Barrier Installation	Silt Fence - Type A	LF	
7		Silt Fence - Type C	LF	
8		Hay Bale	LF	
9	Sediment Barrier Removal	N/A	LF	
10	Curb Inlet Sediment Trap	N/A	EA	
11	Soil Stabilization	Straw Mulching	SF	
12		Seed and Straw Mulch	SF	
13		Seed and Matt Blanket	SF	
14		Sod	SF	
15	Hauling Material from Outside of County	N/A	HR	
16	Tree Removal	4 inch to 6 inch diameter	EA	
17		Greater than 6 inch to 12 inch diameter	EA	
18		Greater than 12 inch to 24 inch diameter	EA	
19		Greater than 24 inch to 36 inch diameter	EA	
20	Easement Clearing	N/A	SF	
21	Fence Work	Chain-Link / Wire Removal or Reinstall	LF	
22		Wood Removal or Reinstall	LF	
23	General Excavation	Up to 6 feet deep	CF	
24		Greater than 6 feet to 10 feet deep	CF	
25		Greater than 10 feet to 14 feet deep	CF	
26		Greater than 14 feet to 18 feet deep	CF	
27	Rock Excavation	N/A	CF	
28	General Fill / Backfill	Fill Dirt	CF	
29		Sand	CF	
30		Crushed Stone / Graded Aggregate Base	CF	
31		#3, #4, #34, #5, #57 and #89 Stone	CF	
32		Surge Stone	CF	
33		Rip-Rap Stone Type III	CF	
34	Stone Placement Crushed Stone / Graded Aggregate Base	6 inch thick layer	SF	
35		2 inch thick increment	SF	
36	Stone Placement #3, #4, #34, #5, #57 and #89 Stone	6 inch thick layer	SF	
37		2 inch thick increment	SF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
38	Stone Placement Surge Stone	Surge Stone 6 inch thick layer	SF	
39		6 inch thick increment	SF	
40	Stone Placement Type III Rip-Rap	Type III Rip-Rap Stone 12 inch thick layer	SF	
41		12 inch thick increment	SF	
42	Stone Placement Type 1 Rip-Rap	Type 1 Rip-Rap	SF	
43	Gabion Basket Installation	N/A	CF	
44	Geotextile Fabric Installation	N/A	SF	
45	Remove Asphalt	Up to 4 inch thick layer	SF	
46	Remove Asphalt	Greater than 4 inch to 8 inch thick layer	SF	
47	Remove Asphalt	Greater than 8 inch to 12 inch thick layer	SF	
48	Remove Asphalt	Greater than 12 inch thick layer	SF	
49	Remove Concrete Flat Work	Up to 4 inch thick layer	SF	
50	Remove Concrete Flat Work	Greater than 4 inch to 8 inch thick layer	SF	
51	Remove Concrete Flat Work	Greater than 8 inch to 12 inch thick layer	SF	
52	Remove Concrete Flat Work	Greater than 12 inch thick layer	SF	
53	Remove Concrete Flat Work	Curb and Gutter	LF	
54	Milling Pavement	Up to 1500 SF	EA	
55		Additional Square Footage	SF	
56	Asphalt Patching	3 inch thick layer	SF	
57		1 inch thick increment	SF	
58	Asphalt Paving	3 inch thick layer	SF	
59		1 inch thick increment	SF	
60	Concrete Flatwork	Up to 4 inch thick layer	SF	
61		Greater than 4 inch to 6 inch thick layer	SF	
62		Greater than 6 inch to 8 inch thick layer	SF	
63		Greater than 8 inch to 10 inch thick layer	SF	
64		Wire Mesh	SF	
65		Steel Reinforcement	LF	
66	Curb and Gutter Replacement	Up to 24 inch width, square back	LF	
67		Up to 24 inch width, roll back	LF	
68	Catch Basin Spillway Throat	N/A	LF	
69	Pavement Striping	Up to 6 inch wide	LF	
70		24 inch wide	LF	
71	Pavement Marking	Handicap Symbol	EA	
72	Pressure Washing	N/A	SF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
73	Pumping 4-inch Pump	Single Pump System	DY	
74		Single Pump System	WK	
75		Single Pump System	2WK	
76		Single Pump System	MO	
77		Redundant Pump System	DY	
78		Redundant Pump System	WK	
79		Redundant Pump System	2WK	
80		Redundant Pump System	MO	
81	Pumping 6-inch Pump	Single Pump System	DY	
82		Single Pump System	WK	
83		Single Pump System	2WK	
84		Single Pump System	MO	
85		Redundant Pump System	DY	
86		Redundant Pump System	WK	
87		Redundant Pump System	2WK	
88		Redundant Pump System	MO	
89	Pumping 8-inch Pump	Single Pump System	DY	
90		Single Pump System	WK	
91		Single Pump System	2WK	
92		Single Pump System	MO	
93		Redundant Pump System	DY	
94		Redundant Pump System	WK	
95		Redundant Pump System	2WK	
96		Redundant Pump System	MO	
97	Pumping 10-inch Pump	Single Pump System	DY	
98		Single Pump System	WK	
99		Single Pump System	2WK	
100		Single Pump System	MO	
101		Redundant Pump System	DY	
102		Redundant Pump System	WK	
103		Redundant Pump System	2WK	
104		Redundant Pump System	MO	
105	Pumping 12-inch Pump	Single Pump System	DY	
106		Single Pump System	WK	
107		Single Pump System	2WK	
108		Single Pump System	MO	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
109		Redundant Pump System	DY	
110		Redundant Pump System	WK	
111		Redundant Pump System	2WK	
112		Redundant Pump System	MO	
113	Pipe Installation - Open Cut Copper (Type "K") Up to 1-inch	Installation / Replacement	EA	
114		Additional Footage	LF	
115	Pipe Installation - Augered Copper (Type "K") Up to 1-inch	Installation / Replacement	EA	
116		Additional Footage	LF	
117	Pipe Installation - Open Cut Copper (Type "L") 1-1/2 to 2-inch	Up to 6 feet deep	LF	
118		Greater than 6 feet to 10 feet deep	LF	
119		Greater than 10 feet deep	LF	
120	Pipe Installation - Augered Copper (Type "L") 1-1/2 to 2-inch	Up to 6 feet deep	LF	
121		Greater than 6 feet to 10 feet deep	LF	
122		Greater than 10 feet deep	LF	
123	Pipe Installation - Open Cut PVC up to 8-inch	Point Repair, up to 6 feet deep	EA	
124		Point Repair, greater than 6 feet to 10 feet deep	EA	
125		Point Repair, greater than 10 feet to 14 feet deep	EA	
126		Point Repair, greater than 14 feet to 18 feet deep	EA	
127		Additional Footage, up to 6 feet deep	LF	
128		Additional Footage, greater than 6 feet to 10 feet deep	LF	
129		Additional Footage, greater than 10 feet to 14 feet deep	LF	
130		Additional Footage, greater than 14 feet to 18 feet deep	LF	
131	Pipe Installation - Open Cut PVC greater than 8-inch to 16-inch	Point Repair, up to 6 feet deep	EA	
132		Point Repair, greater than 6 feet to 10 feet deep	EA	
133		Point Repair, greater than 10 feet to 14 feet deep	EA	
134		Point Repair, greater than 14 feet to 18 feet deep	EA	
135		Additional Footage, up to 6 feet deep	LF	
136		Additional Footage, greater than 6 feet to 10 feet deep	LF	
137		Additional Footage, greater than 10 feet to 14 feet deep	LF	
138		Additional Footage, greater than 14 feet to 18 feet deep	LF	
139	Pipe Installation - Open Cut PVC greater than 16-inch to 24-inch	Point Repair, up to 6 feet deep	EA	
140		Point Repair, greater than 6 feet to 10 feet deep	EA	
141		Point Repair, greater than 10 feet to 14 feet deep	EA	
142		Point Repair, greater than 14 feet to 18 feet deep	EA	
143		Additional Footage, up to 6 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
144		Additional Footage, greater than 6 feet to 10 feet deep	LF	
145		Additional Footage, greater than 10 feet to 14 feet deep	LF	
146		Additional Footage, greater than 14 feet to 18 feet deep	LF	
147	Pipe Installation - Open Cut PVC greater than 24-inch to 36-inch	Point Repair, up to 6 feet deep	EA	
148		Point Repair, greater than 6 feet to 10 feet deep	EA	
149		Point Repair, greater than 10 feet to 14 feet deep	EA	
150		Point Repair, greater than 14 feet to 18 feet deep	EA	
151		Additional Footage, up to 6 feet deep	LF	
152		Additional Footage, greater than 6 feet to 10 feet deep	LF	
153		Additional Footage, greater than 10 feet to 14 feet deep	LF	
154		Additional Footage, greater than 14 feet to 18 feet deep	LF	
155	Pipe Installation - Open Cut DI up to 8-inch	Point Repair, up to 6 feet deep	EA	
156		Point Repair, greater than 6 feet to 10 feet deep	EA	
157		Point Repair, greater than 10 feet to 14 feet deep	EA	
158		Point Repair, greater than 14 feet to 18 feet deep	EA	
159		Additional Footage, up to 6 feet deep	LF	
160		Additional Footage, greater than 6 feet to 10 feet deep	LF	
161		Additional Footage, greater than 10 feet to 14 feet deep	LF	
162		Additional Footage, greater than 14 feet to 18 feet deep	LF	
163	Pipe Installation - Open Cut DI greater than 8-inch to 16-inch	Point Repair, up to 6 feet deep	EA	
164		Point Repair, greater than 6 feet to 10 feet deep	EA	
165		Point Repair, greater than 10 feet to 14 feet deep	EA	
166		Point Repair, greater than 14 feet to 18 feet deep	EA	
167		Additional Footage, up to 6 feet deep	LF	
168		Additional Footage, greater than 6 feet to 10 feet deep	LF	
169		Additional Footage, greater than 10 feet to 14 feet deep	LF	
170		Additional Footage, greater than 14 feet to 18 feet deep	LF	
171	Pipe Installation - Open Cut DI greater than 16-inch to 24-inch	Point Repair, up to 6 feet deep	EA	
172		Point Repair, greater than 6 feet to 10 feet deep	EA	
173		Point Repair, greater than 10 feet to 14 feet deep	EA	
174		Point Repair, greater than 14 feet to 18 feet deep	EA	
175		Additional Footage, up to 6 feet deep	LF	
176		Additional Footage, greater than 6 feet to 10 feet deep	LF	
177		Additional Footage, greater than 10 feet to 14 feet deep	LF	
178		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
179	Pipe Installation - Open Cut DI greater than 24-inch to 36-inch	Point Repair, up to 6 feet deep	EA	
180		Point Repair, greater than 6 feet to 10 feet deep	EA	
181		Point Repair, greater than 10 feet to 14 feet deep	EA	
182		Point Repair, greater than 14 feet to 18 feet deep	EA	
183		Additional Footage, up to 6 feet deep	LF	
184		Additional Footage, greater than 6 feet to 10 feet deep	LF	
185		Additional Footage, greater than 10 feet to 14 feet deep	LF	
186		Additional Footage, greater than 14 feet to 18 feet deep	LF	
187	Pipe Installation - Open Cut DI greater than 36-inch to 48-inch	Point Repair, up to 6 feet deep	EA	
188		Point Repair, greater than 6 feet to 10 feet deep	EA	
189		Point Repair, greater than 10 feet to 14 feet deep	EA	
190		Point Repair, greater than 14 feet to 18 feet deep	EA	
191		Additional Footage, up to 6 feet deep	LF	
192		Additional Footage, greater than 6 feet to 10 feet deep	LF	
193		Additional Footage, greater than 10 feet to 14 feet deep	LF	
194		Additional Footage, greater than 14 feet to 18 feet deep	LF	
195	Pipe Installation - Open Cut DI greater than 48-inch to 60-inch	Point Repair, up to 6 feet deep	EA	
196		Point Repair, greater than 6 feet to 10 feet deep	EA	
197		Point Repair, greater than 10 feet to 14 feet deep	EA	
198		Point Repair, greater than 14 feet to 18 feet deep	EA	
199		Additional Footage, up to 6 feet deep	LF	
200		Additional Footage, greater than 6 feet to 10 feet deep	LF	
201		Additional Footage, greater than 10 feet to 14 feet deep	LF	
202		Additional Footage, greater than 14 feet to 18 feet deep	LF	
203	Pipe Installation - Open Cut RC up to 16-inch	Point Repair, up to 6 feet deep	EA	
204		Point Repair, greater than 6 feet to 10 feet deep	EA	
205		Point Repair, greater than 10 feet to 14 feet deep	EA	
206		Point Repair, greater than 14 feet to 18 feet deep	EA	
207		Additional Footage, up to 6 feet deep	LF	
208		Additional Footage, greater than 6 feet to 10 feet deep	LF	
209		Additional Footage, greater than 10 feet to 14 feet deep	LF	
210		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
211	Pipe Installation - Open Cut RC greater than 16-inch to 24-inch	Point Repair, up to 6 feet deep	EA	
212		Point Repair, greater than 6 feet to 10 feet deep	EA	
213		Point Repair, greater than 10 feet to 14 feet deep	EA	
214		Point Repair, greater than 14 feet to 18 feet deep	EA	
215		Additional Footage, up to 6 feet deep	LF	
216		Additional Footage, greater than 6 feet to 10 feet deep	LF	
217		Additional Footage, greater than 10 feet to 14 feet deep	LF	
218		Additional Footage, greater than 14 feet to 18 feet deep	LF	
219	Pipe Installation - Open Cut RC greater than 24-inch to 36-inch	Point Repair, up to 6 feet deep	EA	
220		Point Repair, greater than 6 feet to 10 feet deep	EA	
221		Point Repair, greater than 10 feet to 14 feet deep	EA	
222		Point Repair, greater than 14 feet to 18 feet deep	EA	
223		Additional Footage, up to 6 feet deep	LF	
224		Additional Footage, greater than 6 feet to 10 feet deep	LF	
225		Additional Footage, greater than 10 feet to 14 feet deep	LF	
226		Additional Footage, greater than 14 feet to 18 feet deep	LF	
227	Pipe Installation - Open Cut RC greater than 36-inch to 48-inch	Point Repair, up to 6 feet deep	EA	
228		Point Repair, greater than 6 feet to 10 feet deep	EA	
229		Point Repair, greater than 10 feet to 14 feet deep	EA	
230		Point Repair, greater than 14 feet to 18 feet deep	EA	
231		Additional Footage, up to 6 feet deep	LF	
232		Additional Footage, greater than 6 feet to 10 feet deep	LF	
233		Additional Footage, greater than 10 feet to 14 feet deep	LF	
234		Additional Footage, greater than 14 feet to 18 feet deep	LF	
235	Pipe Installation - Open Cut RC greater than 48-inch to 60-inch	Point Repair, up to 6 feet deep	EA	
236		Point Repair, greater than 6 feet to 10 feet deep	EA	
237		Point Repair, greater than 10 feet to 14 feet deep	EA	
238		Point Repair, greater than 14 feet to 18 feet deep	EA	
239		Additional Footage, up to 6 feet deep	LF	
240		Additional Footage, greater than 6 feet to 10 feet deep	LF	
241		Additional Footage, greater than 10 feet to 14 feet deep	LF	
242		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
243	Pipe Installation - Open Cut RC greater than 60-inch to 72-inch	Point Repair, up to 10 feet deep	EA	
244		Point Repair, greater than 10 feet to 14 feet deep	EA	
245		Point Repair, greater than 14 feet to 18 feet deep	EA	
246		Additional Footage, up to 10 feet deep	LF	
247		Additional Footage, greater than 10 feet to 14 feet deep	LF	
248		Additional Footage, greater than 14 feet to 18 feet deep	LF	
249	Pipe Installation - Open Cut RC greater than 72-inch to 84-inch	Point Repair, up to 10 feet deep	EA	
250		Point Repair, greater than 10 feet to 14 feet deep	EA	
251		Point Repair, greater than 14 feet to 18 feet deep	EA	
252		Additional Footage, up 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 RC greater than 84-inch to 96-inch	Point Repair, up to 10 feet deep	EA	
256		Point Repair, greater than 10 feet to 14 feet deep	EA	
257		Point Repair, greater than 14 feet to 18 feet deep	EA	
258		Additional Footage, up to 10 feet deep	LF	
259		Additional Footage, greater than 10 feet to 14 feet deep	LF	
260		Additional Footage, greater than 14 feet to 18 feet deep	LF	
261	Pipe Installation - Open Cut RC greater than 96-inch to 108-inch	Point Repair, up to 10 feet deep	EA	
262		Point Repair, greater than 10 feet to 14 feet deep	EA	
263		Point Repair, greater than 14 feet to 18 feet deep	EA	
264		Additional Footage, up to 10 feet deep	LF	
265		Additional Footage, greater than 10 feet to 14 feet deep	LF	
266		Additional Footage, greater than 14 feet to 18 feet deep	LF	
267	Pipe Installation - Open Cut HDPE up to 8-inch	Point Repair, up to 6 feet deep	EA	
268		Point Repair, greater than 6 feet to 10 feet deep	EA	
269		Point Repair, greater than 10 feet to 14 feet deep	EA	
270		Point Repair, greater than 14 feet to 18 feet deep	EA	
271		Additional Footage, up to 6 feet deep	LF	
272		Additional Footage, greater than 6 feet to 10 feet deep	LF	
273		Additional Footage, greater than 10 feet to 14 feet deep	LF	
274		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
275	Pipe Installation - Open Cut HDPE greater than 8-inch to 16-inch	Point Repair, up to 6 feet deep	EA	
276		Point Repair, greater than 6 feet to 10 feet deep	EA	
277		Point Repair, greater than 10 feet to 14 feet deep	EA	
278		Point Repair, greater than 14 feet to 18 feet deep	EA	
279		Additional Footage, up to 6 feet deep	LF	
280		Additional Footage, greater than 6 feet to 10 feet deep	LF	
281		Additional Footage, greater than 10 feet to 14 feet deep	LF	
282		Additional Footage, greater than 14 feet to 18 feet deep	LF	
283	Pipe Installation - Open Cut HDPE greater than 16-inch to 24-inch	Point Repair, up to 6 feet deep	EA	
284		Point Repair, greater than 6 feet to 10 feet deep	EA	
285		Point Repair, greater than 10 feet to 14 feet deep	EA	
286		Point Repair, greater than 14 feet to 18 feet deep	EA	
287		Additional Footage, up to 6 feet deep	LF	
288		Additional Footage, greater than 6 feet to 10 feet deep	LF	
289		Additional Footage, greater than 10 feet to 14 feet deep	LF	
290		Additional Footage, greater than 14 feet to 18 feet deep	LF	
291	Pipe Installation - Open Cut HDPE greater than 24-inch to 36-inch	Point Repair, up to 6 feet deep	EA	
292		Point Repair, greater than 6 feet to 10 feet deep	EA	
293		Point Repair, greater than 10 feet to 14 feet deep	EA	
294		Point Repair, greater than 14 feet to 18 feet deep	EA	
295		Additional Footage, up to 6 feet deep	LF	
296		Additional Footage, greater than 6 feet to 10 feet deep	LF	
297		Additional Footage, greater than 10 feet to 14 feet deep	LF	
298		Additional Footage, greater than 14 feet to 18 feet deep	LF	
299	Pipe Installation - Open Cut HDPE greater than 36-inch to 48-inch	Point Repair, up to 6 feet deep	EA	
300		Point Repair, greater than 6 feet to 10 feet deep	EA	
301		Point Repair, greater than 10 feet to 14 feet deep	EA	
302		Point Repair, greater than 14 feet to 18 feet deep	EA	
303		Additional Footage, up to 6 feet deep	LF	
304		Additional Footage, greater than 6 feet to 10 feet deep	LF	
305		Additional Footage, greater than 10 feet to 14 feet deep	LF	
306		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
307	Pipe Installation - Open Cut HDPE greater than 48-inch to 60-inch	Point Repair, up to 6 feet deep	EA	
308		Point Repair, greater than 6 feet to 10 feet deep	EA	
309		Point Repair, greater than 10 feet to 14 feet deep	EA	
310		Point Repair, greater than 14 feet to 18 feet deep	EA	
311		Additional Footage, up to 6 feet deep	LF	
312		Additional Footage, greater than 6 feet to 10 feet deep	LF	
313		Additional Footage, greater than 10 feet to 14 feet deep	LF	
314		Additional Footage, greater than 14 feet to 18 feet deep	LF	
315	Pipe Installation - Open Cut CM up to 15-inch	Point Repair, up to 6 feet deep	EA	
316		Point Repair, greater than 6 feet to 10 feet deep	EA	
317		Point Repair, greater than 10 feet to 14 feet deep	EA	
318		Point Repair, greater than 14 feet to 18 feet deep	EA	
319		Additional Footage, up to 6 feet deep	LF	
320		Additional Footage, greater than 6 feet to 10 feet deep	LF	
321		Additional Footage, greater than 10 feet to 14 feet deep	LF	
322		Additional Footage, greater than 14 feet to 18 feet deep	LF	
323	Pipe Installation - Open Cut CM greater than 15-inch to 24-inch	Point Repair, up to 6 feet deep	EA	
324		Point Repair, greater than 6 feet to 10 feet deep	EA	
325		Point Repair, greater than 10 feet to 14 feet deep	EA	
326		Point Repair, greater than 14 feet to 18 feet deep	EA	
327		Additional Footage, up to 6 feet deep	LF	
328		Additional Footage, greater than 6 feet to 10 feet deep	LF	
329		Additional Footage, greater than 10 feet to 14 feet deep	LF	
330		Additional Footage, greater than 14 feet to 18 feet deep	LF	
331	Pipe Installation - Open Cut CM greater than 24-inch to 36-inch	Point Repair, up to 6 feet deep	EA	
332		Point Repair, greater than 6 feet to 10 feet deep	EA	
333		Point Repair, greater than 10 feet to 14 feet deep	EA	
334		Point Repair, greater than 14 feet to 18 feet deep	EA	
335		Additional Footage, up to 6 feet deep	LF	
336		Additional Footage, greater than 6 feet to 10 feet deep	LF	
337		Additional Footage, greater than 10 feet to 14 feet deep	LF	
338		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
339	Pipe Installation - Open Cut CM greater than 36-inch to 48-inch	Point Repair, up to 6 feet deep	EA	
340		Point Repair, greater than 6 feet to 10 feet deep	EA	
341		Point Repair, greater than 10 feet to 14 feet deep	EA	
342		Point Repair, greater than 14 feet to 18 feet deep	EA	
343		Additional Footage, up to 6 feet deep	LF	
344		Additional Footage, greater than 6 feet to 10 feet deep	LF	
345		Additional Footage, greater than 10 feet to 14 feet deep	LF	
346		Additional Footage, greater than 14 feet to 18 feet deep	LF	
347	Pipe Installation - Open Cut CM greater than 48-inch to 60-inch	Point Repair, up to 6 feet deep	EA	
348		Point Repair, greater than 6 feet to 10 feet deep	EA	
349		Point Repair, greater than 10 feet to 14 feet deep	EA	
350		Point Repair, greater than 14 feet to 18 feet deep	EA	
351		Additional Footage, up to 6 feet deep	LF	
352		Additional Footage, greater than 6 feet to 10 feet deep	LF	
353		Additional Footage, greater than 10 feet to 14 feet deep	LF	
354		Additional Footage, greater than 14 feet to 18 feet deep	LF	
355	Pipe Installation - Open Cut CM greater than 60-inch to 72-inch	Point Repair, up to 10 feet deep	EA	
356		Point Repair, greater than 10 feet to 14 feet deep	EA	
357		Point Repair, greater than 14 feet to 18 feet deep	EA	
358		Additional Footage, up to 10 feet deep	LF	
359		Additional Footage, greater than 10 feet to 14 feet deep	LF	
360		Additional Footage, greater than 14 feet to 18 feet deep	LF	
361	Pipe Installation - Open Cut CM greater than 72-inch to 84-inch	Point Repair, up to 10 feet deep	EA	
362		Point Repair, greater than 10 feet to 14 feet deep	EA	
363		Point Repair, greater than 14 feet to 18 feet deep	EA	
364		Additional Footage, up 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 CM greater than 84-inch to 96-inch	Point Repair, up to 10 feet deep	EA	
368		Point Repair, greater than 10 feet to 14 feet deep	EA	
369		Point Repair, greater than 14 feet to 18 feet deep	EA	
370		Additional Footage, up to 10 feet deep	LF	
371		Additional Footage, greater than 10 feet to 14 feet deep	LF	
372		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
373	Pipe Installation - Open Cut FRPM 18-inch to 24-inch	Point Repair, up to 6 feet deep	EA	
374		Point Repair, greater than 6 feet to 10 feet deep	EA	
375		Point Repair, greater than 10 feet to 14 feet deep	EA	
376		Point Repair, greater than 14 feet to 18 feet deep	EA	
377		Additional Footage, up to 6 feet deep	LF	
378		Additional Footage, greater than 6 feet to 10 feet deep	LF	
379		Additional Footage, greater than 10 feet to 14 feet deep	LF	
380		Additional Footage, greater than 14 feet to 18 feet deep	LF	
381	Pipe Installation - Open Cut FRPM greater than 24-inch to 36-inch	Point Repair, up to 6 feet deep	EA	
382		Point Repair, greater than 6 feet to 10 feet deep	EA	
383		Point Repair, greater than 10 feet to 14 feet deep	EA	
384		Point Repair, greater than 14 feet to 18 feet deep	EA	
385		Additional Footage, up to 6 feet deep	LF	
386		Additional Footage, greater than 6 feet to 10 feet deep	LF	
387		Additional Footage, greater than 10 feet to 14 feet deep	LF	
388		Additional Footage, greater than 14 feet to 18 feet deep	LF	
389	Pipe Installation - Open Cut FRPM greater than 36-inch to 48-inch	Point Repair, up to 6 feet deep	EA	
390		Point Repair, greater than 6 feet to 10 feet deep	EA	
391		Point Repair, greater than 10 feet to 14 feet deep	EA	
392		Point Repair, greater than 14 feet to 18 feet deep	EA	
393		Additional Footage, up to 6 feet deep	LF	
394		Additional Footage, greater than 6 feet to 10 feet deep	LF	
395		Additional Footage, greater than 10 feet to 14 feet deep	LF	
396		Additional Footage, greater than 14 feet to 18 feet deep	LF	
397	Pipe Installation - Open Cut FRPM greater than 48-inch to 60-inch	Point Repair, up to 6 feet deep	EA	
398		Point Repair, greater than 6 feet to 10 feet deep	EA	
399		Point Repair, greater than 10 feet to 14 feet deep	EA	
400		Point Repair, greater than 14 feet to 18 feet deep	EA	
401		Additional Footage, up to 6 feet deep	LF	
402		Additional Footage, greater than 6 feet to 10 feet deep	LF	
403		Additional Footage, greater than 10 feet to 14 feet deep	LF	
404		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
405	Pipe Installation - Open Cut Steel Casing up to 18-inch	Up to 6 feet deep	LF	
406		Greater than 6 feet to 10 feet deep	LF	
407		Greater than 10 feet to 14 feet deep	LF	
408		Greater than 14 feet to 18 feet deep	LF	
409		Weld	EA	
410	Pipe Installation - Open Cut Steel Casing greater than 18-inch to 24-inch	Up to 6 feet deep	LF	
411		Greater than 6 feet to 10 feet deep	LF	
412		Greater than 10 feet to 14 feet deep	LF	
413		Greater than 14 feet to 18 feet deep	LF	
414		Weld	EA	
415	Pipe Installation - Open Cut Steel Casing greater than 24-inch to 36-inch	Up to 6 feet deep	LF	
416		Greater than 6 feet to 10 feet deep	LF	
417		Greater than 10 feet to 14 feet deep	LF	
418		Greater than 14 feet to 18 feet deep	LF	
419		Weld	EA	
420	Pipe Installation - Open Cut Steel Casing greater than 36-inch to 48-inch	Up to 6 feet deep	LF	
421		Greater than 6 feet to 10 feet deep	LF	
422		Greater than 10 feet to 14 feet deep	LF	
423		Greater than 14 feet to 18 feet deep	LF	
424		Weld	EA	
425	Cased Bore 12"	Non Steered	LF	
426		Steered	LF	
427		Rock Bore (Additional Per)	LF	
428	Cased Bore 18"	Non Steered	LF	
429		Steered	LF	
430		Rock Bore (Additional Per)	LF	
431	Cased Bore 24"	Non Steered	LF	
432		Steered	LF	
433		Rock Bore (Additional Per)	LF	
434	Cased Bore 36"	Non Steered	LF	
435		Steered	LF	
436		Rock Bore (Additional Per)	LF	
437	Cased Bore 48"	Non Steered	LF	
438		Steered	LF	
439		Rock Bore (Additional Per)	LF	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
440	Cased Bore 54"	Non Steered	LF	
441		Steered	LF	
442		Rock Bore (Additional Per)	LF	
443	Cased Bore 60"	Non Steered	LF	
444		Steered	LF	
445		Rock Bore (Additional Per)	LF	
446	Bore Entry Pit	Up to 6 feet deep	VF	
447		Greater than 6 feet deep to 12 feet deep	VF	
448		Greater than 12 feet deep to 18 feet deep	VF	
449		Greater than 18 feet deep	VF	
450	Bore Receiving Pit	Up to 6 feet deep	VF	
451		Greater than 6 feet deep to 12 feet deep	VF	
452		Greater than 12 feet deep to 18 feet deep	VF	
453		Greater than 18 feet deep	VF	
454	Pipe Insertion into Steel Casing PVC up to 8-inch	N/A	LF	
455	Pipe Insertion into Steel Casing PVC greater than 8-inch to 16-inch	N/A	LF	
456	Pipe Insertion into Steel Casing PVC greater than16-inch to 24-inch	N/A	LF	
457	Pipe Insertion into Steel Casing DI up to 8-inch	N/A	LF	
458	Pipe Insertion into Steel Casing DI greater than 8-inch to 16-inch	N/A	LF	
459	Pipe Insertion into Steel Casing DI greater than 16-inch to 24-inch	N/A	LF	
460	Pipe Insertion into Steel Casing DI greater than 24-inch to 36-inch	N/A	LF	
461	Directional Drill Mobilization	N/A	EA	
462	Directional Drill Boring	N/A	LF	
463	Polyethylene Pipe Encasement	For Pipe up to 16-inch	LF	
464		For Pipe greater than 16-inch to 24-inch	LF	
465		For Pipe greater than 24-inch to 36-inch	LF	
466		For Pipe greater than 36-inch to 48-inch	LF	
467	Core into Pipe	Up to 2-inch core into pipe	EA	
468		Greater than 2-inch to 6-inch core into pipe	EA	
469		8-inch core into pipe	EA	
470		10-inch core into pipe	EA	
471		12-inch core into pipe	EA	
472		16-inch core into pipe	EA	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
473		18-inch core into pipe	EA	
474		20-inch core into pipe	EA	
475		24-inch core into pipe	EA	
476	Connect Fitting / Valve to Pipe Brass / Bronze Fitting / Valve	up to 2-inch	EA	
477	Connect Fitting / Valve to Pipe PVC Fitting / Valve	up to 8-inch	EA	
478	Connect Fitting / Valve to Pipe PVC Fitting / Valve	Greater than 8-inch to 16-inch	EA	
479	Connect Fitting / Valve to Pipe PVC Fitting / Valve	Greater than 16-inch to 24-inch	EA	
480	Connect Fitting / Valve to Pipe DI Fitting / Valve	up to 8-inch	EA	
481	Connect Fitting / Valve to Pipe DI Fitting / Valve	Greater than 8-inch to 16-inch	EA	
482	Connect Fitting / Valve to Pipe DI Fitting / Valve	Greater than 16-inch to 24-inch	EA	
483	Connect Fitting / Valve to Pipe DI Fitting / Valve	Greater than 24-inch to 36-inch	EA	
484	Connect Fitting / Valve to Pipe DI Fitting / Valve	Greater than 36-inch to 48-inch	EA	
485	Fire Hydrant Installation	Up to 5-foot Bury Depth	EA	
486		Greater than 5-foot Bury Depth	EA	
487		Post Hydrant	EA	
488	Fire Hydrant (Existing) Vertical Adjustment	N/A	VF	
489	Fire Hydrant Removal	Up to 5-foot Bury Depth	EA	
490		Greater than 5-foot Bury Depth	EA	
491		Post Hydrant	EA	
492	Air / Vacuum Release Valve Installation	N/A	EA	
493	Concrete Thrust Restraint	Tie-Back	EA	
494		Block for Pipe up to 16-inch	EA	
495		Block for Pipe greater than 16-inch to 24-inch	EA	
496		Block for Pipe greater than 24-inch to 36-inch	EA	
497	Pipe Collar	N/A	CF	
498	Flared End Section Installation	For Pipe up to 16-inch	EA	
499		For Pipe greater than 16-inch to 24-inch	EA	
500		For Pipe greater than 24-inch to 36-inch	EA	
501		For Pipe greater than 36-inch to 48-inch	EA	
502	Precast Headwall Installation	For Pipe up to 16 Inch	EA	
503		For Pipe greater than 16 Inch to 24 Inch	EA	
504		For Pipe greater than 24 Inch to 36 Inch	EA	
505		For Pipe greater than 36 Inch to 48 Inch	EA	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
506		For Pipe greater than 48 Inch to 60 Inch	EA	
507		For Pipe greater than 60 Inch to 72 Inch	EA	
508		For Pipe greater than 72 Inch to 84 Inch	EA	
509		For Pipe greater than 84 Inch to 96 Inch	EA	
510	Precast Manhole Installation 4-Foot Diameter	Base Slab	EA	
511		Riser	VF	
512	Precast Manhole Installation 5-Foot Diameter	Base Slab	EA	
513		Riser	VF	
514	Precast Manhole Installation 6-Foot Diameter	Base Slab	EA	
515		Riser	VF	
516	Precast Manhole Installation 7-Foot Diameter	Base Slab	EA	
517		Riser	VF	
518	Precast Manhole Installation 8-Foot Diameter	Base Slab	EA	
519		Riser	VF	
520	Precast Manhole Installation 9-Foot Diameter	Base Slab	EA	
521		Riser	VF	
522	Precast Manhole Installation 10-Foot Diameter	Base Slab	EA	
523		Riser	VF	
524	Precast Box / Vault Installation Up to 5-Foot by 5-Foot	Base Slab	EA	
525		Riser	VF	
526	Precast Box / Vault Installation Greater than 5-Foot by 5-Foot to 8-Foot by 8-Foot	Base Slab	EA	
527		Riser	VF	
528	Precast Box / Vault Installation 8-Foot by 12-Foot	Base Slab	EA	
529		Riser	VF	
530	Precast Box / Vault Installation 8-Foot by 16-Foot	Base Slab	EA	
531		Riser	VF	
532	Manhole Invert Construction 4-Foot Diameter Manhole	Cast-in-Place Concrete	EA	
533		Brick and Mortar	EA	
534	Manhole Invert Construction 5-Foot Diameter Manhole	Cast-in-Place Concrete	EA	
535		Brick and Mortar	EA	
536	Manhole Invert Construction 6-Foot Diameter Manhole	Cast-in-Place Concrete	EA	
537		Brick and Mortar	EA	
538	Manhole Invert Construction 7-Foot Diameter Manhole	Cast-in-Place Concrete	EA	
539		Brick and Mortar	EA	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
540	Manhole Invert Construction 8-Foot Diameter Manhole	Cast-in-Place Concrete	EA	
541		Brick and Mortar	EA	
542	Manhole Invert Construction 9-Foot Diameter Manhole	Cast-in-Place Concrete	EA	
543		Brick and Mortar	EA	
544	Manhole Invert Construction 10-Foot Diameter Manhole	Cast-in-Place Concrete	EA	
545		Brick and Mortar	EA	
546	Other Invert Construction	Cast-in-Place Concrete	SF	
547		Brick and Mortar	SF	
548	Ring and Cover Installation	Installation	EA	
549		Additional Height, Per Brick Layer	EA	
550	Precast Catch Basin Spillway Installation	N/A	EA	
551	Precast Catch Basin Top Slab Installation	N/A	EA	
552	Concrete Core	Up to 4-inch diameter core	EA	
553		Greater than 4-inch to 12-inch diameter core	EA	
554		Greater than 12-inch to 18-inch diameter core	EA	
555		Greater than 18-inch to 24-inch diameter core	EA	
556	Brick Work	1 Brick Deep Wall Construction	SF	
557		2 Brick Deep Wall Construction	SF	
558		3 Brick Deep Wall Construction	SF	
559		4 Brick Deep Wall Construction	SF	
560	Concrete Work	Bulk	CY	
561		Form Work	SF	
562		Steel Reinforcement	LF	
563	Cementitious Grouting	Grout Mixed by Hand	CF	
564		Grout Mixed by Plant	CY	
565		Pump Mobilization	EA	
566	Chemical Grouting	Grout	GAL	
567		Pump Mobilization	EA	
568	Pressure Testing	Low Pressure Air	EA	
569		Hydrostatic	EA	
570	CCTV Testing	With or Without PACP Assessment	LF	
571	Deformation Testing	N/A	LFH	
572	Pipe Disinfection	N/A	GAL	

Division 2 Bid Requirements

Section 4: Bid Form – Pay Item Schedule

Item No.	Work Item	Detail	UOM	Unit Cost
573	Hourly Labor	Superintendent	HR	
574		Foreman	HR	
575		Operator	HR	
576		Pipe Layer	HR	
577		Laborer	HR	
578		Dump Truck Driver	HR	
579	Hourly Equipment	78,000 # Class Excavator	HR	
580		52,000 # Class Excavator	HR	
581		45,000 # Class Excavator	HR	
582		17,000 # Class Excavator	HR	
583		10,000 # Class Excavator	HR	
584		30,000 # Class Rubber Tired Loader	HR	
585		Rubber Tired Backhoe / Loader	HR	
586		18,000 # Class Track Dozier	HR	
587		Vibratory Soil Compactor (Ride On) Up to 66-inch compaction width	HR	
588		Vibratory Soil Compactor (Remote Controlled) Up to 48-inch compaction width	HR	
589		Dump Truck (Tandem Rear Axle)	HR	
590		Hydro Excavator	HR	
591		Utility Truck Fully Equipped with Hand Tools, Air Tools, Cutting Tools, Mudhog Pump, Generator, Air Compressor, Mechanical Tamp	HR	
592	Traffic Control Rental	N/A	EA	10%
593	Equipment Rental	N/A	EA	10%
594	Supplied Material	N/A	EA	10%
595	Specialty Services	N/A	EA	10%

N/A = Non-applicable; **DY** = Day; **WK** = Week; **2WK** = Two Weeks; **MO** = Month; **LF** = Linear Foot; **SF** = Square Foot; **CF** = Cubic Foot; **EA** = Each; **VF** = Vertical Foot; **CY** = Cubic Yard; **GAL** = Gallon; **HR** = Hour.

Submitted by:

_____

_____

(NAME OF BIDDER)

Is the Bidder a CCWA certified SLBE? ❍ YES ❍ NO

County: _____

Division 2 Bid Requirements

Section 4: Bid Form

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

Submitted by:

_____
(NAME OF BIDDER)

By: _____
(SIGNATURE)

_____
(TITLE)

_____
(DATE)

_____
(SEAL)
(ATTEST)

_____
(ADDRESS)

_____
(PHONE NUMBER)

_____
(UTILITY CONTRACTOR LICENSE NUMBER) (Required)

_____
(E-MAIL ADDRESS)

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 **Annual Contract for General Pipe Work**, 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 General 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

Division 2 Bid Requirements

Section 5: Georgia Bid Bond

($5,000.00) be submitted with said Bid as a guarantee that the Bidder would, if awarded 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: _____

UTILITY CONTRACTOR LICENSE NO.: _____

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 ❑ Partnership
❑ Privately Held Corporation/LLC ❑ Publicly Owned Company ❑ Attorney ❑ Other (specify):

_____

NAMES OF PRINCIPAL OFFICERS: _____

_____

_____

Provide the Bidder's personnel who currently hold the below required active licenses and certification. **A bid where the bidder does not currently employ the personnel that hold the required license and certification will be deemed non-responsive.**

License / Certification	License / Cert. Number	Expiration Date	Name	Employed by Bidder (Yes/No)	Years Worked with Bidder
Utility Manager					
Erosion Level 1A					

Verify the Bidder owns the below list of equipment. **A bid where the bidder does not currently own the below list of equipment will be deemed non-responsive.**

Equipment	Own (Yes/No)
78,000# Class Excavator	
Rubber Tired Backhoe / Loader	
Vibratory Soil Compactor 48" Width (minimum)	
Dump Truck (tandem rear axle)	

Division 2 Bid Requirements

Section 6: Bidder Qualification Information

REFERENCES

Provide a reference for each of the two below work categories that has been completed by the Bidder within the last five years. If work in either category was performed for CCWA, provide the name of the project. ***Failure to provide satisfactory references will result in the bid being deemed non-responsive.***

Water Main Work Category – (Pipe Work Minimum 10-inch Diameter)

Company/Gov't Entity Name: _____

Contact Name: _____

Phone Number: _____

Email Address: _____

Address: _____

Project Name: _____

Project Date: _____

Sanitary Sewer Work Category – (Pipe Work Minimum 24-inch diameter and that included pumping flow bypass)

Company/Gov't Entity Name: _____

Contact Name: _____

Phone Number: _____

Email Address: _____

Address: _____

Project Name: _____

Project Date: _____

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 the four to seven-digit number	Date of Authorization
Name of Contractor (Printed)	
BY: Authorized Officer or Agent of Contractor (Signature)	Date
Printed Name of Contractor's Authorized Officer or Agent	
Title of Authorized Officer or Agent of Contractor	

SUBSCRIBED AND SWORN BEFORE ME ON THIS _____ 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 the four to seven-digit number	Date of Authorization
Name of Sub-contractor (Printed)	
Authorized Officer or Agent of Sub-contractor (Signature)	Date
Name of Sub-contractor's Authorized Officer or Agent (Printed)	
Title of Authorized Officer or Agent of Sub-contractor	

SUBSCRIBED AND SWORN BEFORE ME ON THIS _____ DAY OF _____ 20_____.

Notary Public	My Commission Expires

Division 2

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

8.1 Program Overview

Clayton County Water Authority (CCWA) implemented a Small Local Business Enterprise (SLBE) Program to promote full and open competition in all government procurement and purchasing.

The SLBE program provides an additional race-and gender-neutral tool for the Authority to use in its efforts to ensure that all segments of its local business community have a reasonable and significant opportunity to participate in Authority Solicitations.

SLBEs 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 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.

SLBE in CCWA refers to a locally based small business which meets the following criteria:

- 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.
- 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.
- **Note:** Complete CCWA SLBE Certification Requirements are listed on the Provisional and General Certification Applications; https://www.ccwa.us. To be considered a CCWA SLBE Certified Firm, the vendor shall complete the Certification Process by the solicitation submission deadline.

To encourage participation in contracting regardless of company size, the Authority provides bidders with Solicitation Incentives to ensure that small businesses maintain a competitive advantage in the Authority's solicitation process. The Authority's three Solicitation SLBE Incentives; Bid Discounts, Preference Points, and SLBE Goal utilization are determined on a solicitation-by-solicitation basis.

Division 2

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

8.2 SLBE Incentive Type

The purpose of this section is to communicate the use of an SLBE Incentive (Bid Discount or Preference Points) for Prime Contractors in the solicitation and provide instructions or requirements of the intended SLBE Incentive.

This solicitation offers the following SLBE Incentive: (Refer to check marked section.)

☑ **Bid Discount**

Bid discounts are incentives that allow an original bid amount to be discounted for evaluation purposes in determining the lowest responsive, responsible bidder, while the original bid amount will be the basis for contract award.

The calculation of SLBE tiered bid discounts shall be as follows:

- 10% for SLBE's in Clayton County.
- 7.5% for SLBE's within the 10 counties: Cherokee, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Rockdale and Spalding.

Example: A $100,000 bid with a 7.5% bid discount would be evaluated at $92,500. However, $100,000 would be paid to the successful bidder.

☐ **Preference Points**

RFP Preference Points are point incentives that are awarded on a basis that includes factors other than the lowest price and wherein responses that are submitted by CCWA SLBE Certified Firms are awarded additional points in the evaluation process in the scoring and ranking of proposals. The awarded points are disbursed for CCWA SLBE Certified Firms proposing as a Prime Contractor and located in Clayton County or the ten (10) counties outlined in Section 8.1. RFP Preference points will be added to the total score for evaluation purposes in determining the highest ranked responsible, responsive proposer.

The calculation of tiered RFP Preference Points in this solicitation for CCWA SLBE Certified Firms will be based on the following criteria:

- 10 Points for CCWA SLBE Firms in Clayton County.
- 7.5 Points for CCWA SLBE Firms within the 10 counties: Cherokee, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Rockdale and Spalding.

Division 2

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

Example:

General proposal requirements	(POSSIBLE TOTAL 50 POINTS)
Technical requirements	(POSSIBLE TOTAL 50 POINTS)
SBLE Preference Points	(POSSIBLE TOTAL 10 POINTS)

SLBE Proposal		**NON-SLBE Proposal**	
General Requirements	40	General Requirements	40
Technical Requirements	30	Technical Requirements	30
SLBE Preference Points –Clayton	10	No SLBE Preference	0
TOTAL POINTS	**80**	**TOTAL POINTS**	**70**

8.3 SLBE Conclusion

A bidder does not have to be a CCWA SLBE Certified Firm to participate in a solicitation where Bid Discounts or Preference Points Incentives are offered.

The use of Certified CCWA SLBE Firms as subcontractors will not establish eligibility to receive Bid Discounts or Preference Points. In the event of a tie between a CCWA SLBE Certified Firm and a non-CCWA SLBE Certified firm, the CCWA SLBE Certified Firm will be recommended for the contract.

By signing the solicitation, the bidder is certifying that he/she has complied with the requirements of this program. Contact the Small Business Procurement Coordinator at ccwa_slbe_program@ccwa.us for more information on becoming certified.

8.4 Solicitation SLBE Required Form(s)

For CCWA SLBE Certified Firms claiming a Bid Discount or Preference Points, a copy of their valid CCWA SLBE Certification Letter must be provided with their solicitation response.

END OF SECTION

Division 3 Contract Forms

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____, between the **CLAYTON COUNTY WATER AUTHORITY**, a body corporate and politic, a public corporation, and a political subdivision of the State of Georgia duly created and existing under the laws of the State of Georgia (hereinafter "the Authority"), and _____ (hereinafter “the Contractor”), from time to time collectively referred to herein as “Parties”, witnesseth:

WHEREAS, the Authority is contracting with the Contractor for the provision of certain goods and services as provided for under the terms of this Agreement.

NOW THEREFORE, the Parties agree as follows:

1. **DESCRIPTION OF GOODS AND SERVICES.** The Authority agrees to obtain from the Contractor the goods and services described generally in **Exhibit A** attached hereto and, if applicable, as may be further described on any and all purchase orders issued by the Authority pursuant to Paragraph 5 of this Agreement (individually, a “PO” and collectively, the “POs”) (“Goods and Services”). If any goods and services to be performed are not specifically listed in Exhibit A or herein but are reasonably necessary to accomplish the purpose of this Agreement, Contractor agrees to perform such goods and services at the direction and approval of the Authority. In the event of any conflict between the terms of Exhibit A and this Agreement, the terms of this Agreement shall control.

   Goods and Services to be performed or to be provided under this Agreement will be assigned on an as needed, when needed basis, as determined by the Authority, in the form of a PO. The Authority does not guarantee any minimum or maximum work quantities under this Agreement and reserves the right to bid any pay item as a separate procurement at its sole discretion.

2. **COMPENSATION.** The Authority shall pay to the Contractor the prices stipulated in the Bid dated _____, hereto attached as **Exhibit B** (“Cost Proposal”), as full compensation for Goods and Services. The total amount of

payments by the Authority under this Agreement shall not exceed the amount identified in the Cost Proposal.

The Authority shall pay the Contractor net 30 days upon receipt of an invoice and upon acceptance of Goods and Services in accordance with this Agreement. Payments from the Authority will be delivered to the Contractor electronically or via first-class mail.

3. **TERM OF AGREEMENT.**

(a) The initial term of this Agreement shall commence on _____, 20 ____, and shall terminate on _____, 20____, unless otherwise terminated earlier as provided in this Agreement or unless renewed and extended by the Parties in writing.

(b) Unless otherwise specified in the applicable PO, termination of this Agreement shall not act to terminate or to cancel any PO which has been issued under this Agreement prior to the effective date of such termination of this Agreement. Any such issued PO shall remain in effect and governed by the terms and conditions of this Agreement until such time as the project or engagement initiated by such PO is completed, as determined by the Authority, or is terminated.

4. **RENEWAL ADJUSTMENTS.** The parties recognize that substantial changes in the economy of the nation may occur during the initial term of this Agreement and during each succeeding renewal period. Accordingly, the parties agree that the prices stipulated in the Bid Form ("Contract Price") may be adjusted on each succeeding renewal date of this Agreement in accordance with the Consumer Price Index (All Items, All Urban Consumers, 1982-1984=100), as published by the U.S. Department of Labor, Bureau of Labor Statistics ("CPI") for the calendar month preceding the month during which the renewal date falls, to the extent of change in the index as compared with the index number for the month of the commencement of this Agreement. Notwithstanding anything to the contrary herein, cost-plus pricing shall not be eligible for renewal adjustments.

5. **INITIATION OF INDIVIDUAL PROJECTS.** Each individual project or engagement of Goods and Services by the Authority shall begin with a PO to the Contractor. The PO may contain terms and conditions for adherence by the Contractor; provided, however, that in the event of a conflict between the terms and conditions

of this Agreement and the terms and conditions of the PO, the terms and conditions of this Agreement shall control.

6. **WARRANTY ON SERVICES RENDERED.** The Contractor warrants that the Contractor's services and workmanship provided under this Agreement shall be (i) free from defects for a period of two (2) years from the date of final acceptance of the good or service; (ii) performed as stipulated in the bid/proposal documents and conform to all specifications; (iii) performed by skilled personnel experienced in and capable of doing the kind of work assigned to them; and (iv) performed in accordance to all applicable federal, state, and local laws, regulations, rules, and policies. Upon receipt of written notice of a defect by the Authority, the Contractor shall repair the defect in a timely manner at no expense to the Authority.

7. **WARRANTY ON GOODS PROVIDED.**

(a) The Contractor warrants the Contractor's goods provided under this Agreement for a period of two (2) years from the date of final acceptance of the good. Furthermore, the Contractor warrants and represents that:

1. 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;
2. all goods are merchantable, of good material and workmanship, and free from defect;
3. the goods shall be delivered free of the rightful claim of any person arising from patent or trademark infringement; and
4. the Contractor has absolute and good title to and full right to dispose of the goods, and that there are no liens, claims, or encumbrances of any kind against the goods.

(b) The warranties provided for under subparagraph (a) of this Paragraph, together with the Contractor's service warranties and guarantees, if any shall survive inspection, test, acceptance of, and payment for the goods, 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; and provided, further, that the rights and remedies of the Authority concerning latent defects shall exist indefinitely. The Authority may, at its option, and in addition to other remedies available at law: (i) return defective or nonconforming goods 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 the 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 Paragraph 8 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.

8. **INSPECTION.** The Authority shall have the right to inspect the goods supplied for Goods and Services, or otherwise 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 extensiveness or type, and no approval given in connection with any such inspection, examination, or test, whether under this Agreement or another contract for the same or similar goods, shall relieve the Contractor 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 requirements or documents made a part of this Agreement. 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, the provisions under Paragraphs 6 and 7 of this Agreement relating to warranties. 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 and such charges shall also include time and material and appropriate indirect and overhead expenses. The Contractor shall maintain an inspection system acceptable to the Authority covering the goods furnished for Goods and Services.

9. **CONTRACTOR'S AFFIDAVITS.** The Contractor shall issue a "Waiver and Release of Lien and Payment Bond Rights Upon Interim Payment" and a "Waiver and Release of Lien and Payment Bond Rights upon Final Payment" provided by the Authority before receiving any interim or final payment for any Goods and Services.

10. **RELATIONSHIP OF THE PARTIES.**

(a) Independent Contractors. Nothing contained herein shall be deemed to create any relationship other than that of independent contractor between the Authority and the Contractor. This Agreement shall not constitute, create, or otherwise imply an employment, joint venture, partnership, agency or similar arrangement between the Authority and the Contractor. It is expressly agreed that the Contractor is acting as an independent contractor and not as an employee in providing Goods and Services under this Agreement.

(b) Employee Benefits. The Contractor shall not be eligible for any benefit available to employees of the Authority including, but not limited to, workers' compensation insurance, state disability insurance, unemployment insurance, group health or life insurance, vacation pay, sick pay, severance pay, bonus plans, pension plans, or savings plans.

(c) Payroll Taxes. No income, social security, state disability, or other federal or state payroll tax will be deducted from payments made to the Contractor under this Agreement. The Contractor shall be responsible for all FICA, federal and state withholding taxes, and workers' compensation coverage for any individuals assigned to perform the Services for the Authority.

(d) Conformance with Laws. The Contractor shall perform Goods and Services in compliance with all applicable laws. The Contractor shall be responsible for the cost of obtaining, maintaining, and complying with, and paying all fees and taxes associated with, all applicable licenses, authorizations, consents,

approvals, and permits required of the Contractor for Good and Services and in complying with this Agreement.

11. **ASSIGNMENT AND SUBCONTRACTING.** The Contractor shall not assign this Agreement or any portion of this Agreement, nor shall the Contractor subcontract 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 Paragraphs 6 and 7 of this Agreement relating to warranties.

12. **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 requirements under this Agreement; and (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 shall 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.

13. **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 observer all security requirements and all plant safety, plant protection, and traffic regulations.

14. **INDEMNIFICATION.** To the fullest extent permitted by law, the Contractor agrees to indemnify, defend, and hold harmless the Authority and its board members, directors, officers, officials, employees, agents, and legal representatives (collectively, the "Authority Indemnitees") from and against any and all liabilities, demands, losses, damages, fines, penalties, costs or expenses, including, but not limited to, reasonable attorney's fees and costs or fines or penalties charged by

any governmental entity, incurred by the Authority or any Authority Indemnitees as a result of or arising out of (i) the wrongful misconduct or negligence, including, but not limited to, fraud, of Contractor or its employees, agents, or representatives in performing this Agreement; (ii) a material breach by Contractor of its covenants; or (iii) failure by Contractor or its employees, agents, or representatives to comply with all applicable federal, state, or local law, rule or regulation in connection with Goods and Services under this Agreement. Contractor expressly understands and agrees that any bond or insurance protection required by this Agreement, or otherwise provided by Contractor, shall in no way limit the responsibility to indemnify, keep and hold harmless and defend the Authority or Authority indemnitees as provided herein. These obligations provided for under this paragraph shall survive termination of this Agreement.

15. **RISK MANAGEMENT REQUIREMENTS.** The Contractor shall abide by the Authority's applicable Risk Management Requirements, attached to this Agreement as **Exhibit C** and hereby incorporated into this Agreement.

16. **TERMINATION FOR DEFAULT.**

(a) The Authority may, subject to the provisions of subparagraph (c) of this paragraph, 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) or more days, 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) of this paragraph, the Authority may procure, upon such terms and in such manner as the Authority may deem appropriate, goods or services similar to those so terminated, and Contractor shall be liable to the Authority for any excess costs for the same, including, but not limited to, all cost and expenses of the type specified in Paragraphs 6 and 7 of this Agreement relating to warranties; provided, that the Contractor shall continue the performance of this Agreement to the extent not terminated hereunder.

(c) Except with respect 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 shall not be limited to, acts of God or of the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, 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" as used in this Agreement 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 not in default under the provisions of this paragraph 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 Paragraph 17 of this Agreement relating to Termination for Convenience.

(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.

17. **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 and Goods and Services under this Agreement to the effective date of termination; provided that no amount shall be paid to the Contractor for (i) any anticipatory profits related to Good and Services and 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 Good and Services and work terminated.

18. **CONFLICTS OF INTEREST.** Contractor warrants and represents that:
   (a) The Goods and Services performed under this Agreement will not create an actual or apparent conflict of interest with any other work Contractor is currently performing or may perform during the term of this Agreement;
   (b) Contractor is not presently subject to any agreement with a competitor of the Authority or with any other party that will prevent Contractor from performing in full accord with this Agreement;
   (c) Contractor is not subject to any statute, regulation, ordinance, or rule that will limit Contractor's ability to perform its obligations under this Agreement. The parties agree that Contractor shall be free to accept work other than work from the Authority during the term hereof; provided, however, that such other work shall not interfere with the provision of Services hereunder; and
   (d) Contractor shall immediately notify the Authority in writing specifically disclosing any and all potential or actual conflicts of interests which arise or may arise during the execution of its work in the fulfillment of the requirements of the Agreement.

19. **CONTRACTOR AS CONSULTANT AND CONFLICTS OF INTEREST.** In addition to the duties and responsibilities set forth herein, in the event any work requires the Contractor to develop or draft specifications or requirements for a solicitation or to serve in a consultative role during a bid or proposal evaluation or negotiation process, the Contractor agrees to the following:
   (a) The Contractor shall avoid any appearance of impropriety and shall follow all policies and procedures of the Authority.
   (b) The Contractor shall not have any interest, nor shall the Contractor acquire any interest, directly or indirectly, which would conflict in any manner with the performance of consulting services required under such work.
   (c) The Contractor shall immediately disclose to the Authority any material transaction or relationship, including, but not limited to, that of the Contractor, its employees, agents, or subsidiaries, that reasonably could be expected to give rise to a conflict of interest, including, but not limited to, past, present, or known prospective engagements; involvement in litigation or other dispute; client relationships; or other business or financial interest, and shall immediately disclose any material transaction or relationship subsequently discovered during the pendency of the contract or arrangement.

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The Contractor acknowledges that any violation or threatened violation of the provisions of this paragraph may cause irreparable injury to the Authority, entitling the Authority to seek injunctive relief in addition to all other legal remedies.

20. **DISPUTES.** Pending resolution of any dispute hereunder, the Contractor shall proceed diligently with the performance of work in accordance with the Authority's direction.

21. **NOTICES.** Any notices under this Agreement shall be in writing and sent to the respective party at the following address:

To the Authority:

Attention: Purchasing Manager
Clayton County Water Authority
1600 Battle Creek Road
Morrow, Georgia 30260

To the Contractor:

Attention: _____
_____
_____
_____

Any notice sent pursuant to this paragraph shall be deemed delivered: (i) when delivered by hand or courier or by overnight delivery with signature receipt required; (ii) when sent by confirmed facsimile or email to a party with a copy sent by another means specified in this paragraph; or (iii) three (3) days after the date of mailing by United States certified mail, return receipt requested, postage prepaid. A party may change its address for communications by notice in accordance with this paragraph.

22. **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.

23. **CONFIDENTIAL INFORMATION.**
(a) Disclosure of Confidential Information. The Contractor acknowledges that the Contractor may have access to and become acquainted with confidential

information, including, but not limited to, any information the disclosure of which is limited by state or federal law. Unless approved in advance and in writing or is required to be disclosed by court order, subpoena, or otherwise by law, neither the Contractor nor any of its employees shall disclose, transfer, distribute, or allow access to any confidential information of the other party to third parties. If the Contractor is required to disclose any information that it has access to or became acquainted with as a result of this Agreement, the Contractor shall provide the Authority with at least thirty-six (36) hours prior notice of its intent to disclose such information, describing the content of the information to be disclosed and providing a copy of the pleading, instrument, document, communication, or other written item compelling disclosure with the name, address, phone number, and email address of the person requesting disclosure.

(b) Security Breach Notification. If the Contractor becomes aware of a security breach or any other event that compromises the security, confidentiality, or integrity of information that it has access to or became acquainted with as a result of this Agreement, the Contractor shall take appropriate actions to contain, investigate, and mitigate the security breach or other compromising event. The Contractor shall notify the Authority of a security breach or other compromising event as soon as reasonably possible, but in no event later than seventy-two (72) hours after the Contractor becomes aware of such security breach or other compromising event.

(c) Survival. The obligations provided for under this paragraph shall survive termination of this Agreement.

24. **GOVERNING LAW AND CONSENT TO JURISDICTION.** This Agreement is made and entered into in the State of Georgia, and this Agreement and the rights and obligations of the parties hereto shall be governed by and construed according to the laws of the State of Georgia without giving effect to the principles of conflicts of laws. The jurisdiction for resolution of any disputes arising from this Agreement shall be in the State Court of Clayton County, Georgia.

25. **NON-WAIVER.** The failure by either party to enforce any provision of this Agreement shall not be construed as a waiver or limitation of that party's right to subsequently enforce and compel strict performance with every provision of this Agreement.

26. **SEVERABILITY.** If any provision of this Agreement is held to be unenforceable for any reason, the unenforceability thereof shall not affect the remainder of this

Agreement, which shall remain in full force and effect, and enforceable in accordance with its terms.

27. **INTERPRETATION.** The Parties acknowledge that this Agreement and all the terms and conditions herein have been fully reviewed and negotiated by the Parties. Having acknowledged the foregoing, the Parties agree that any principle of construction or rule of law that provides that, in the event of any inconsistency or ambiguity, an agreement shall be construed against the drafter of the agreement shall have no application to the terms and conditions of this Agreement.

28. **AMENDMENTS.** Any and all modifications or changes to this Agreement must be in writing and signed by the parties to this Agreement.

29. **COUNTERPARTS.** This Agreement may be executed in multiple counterparts, each of which shall constitute the original, but all of which taken together shall constitute one and the same Agreement.

30. **ELECTRONIC SIGNATURES.** Pursuant to O.C.G.A. Section 10-12-7, this Agreement may be executed and delivered by the Parties by electronic transmission. For purposes of this Agreement, any page signed and transmitted electronically shall be treated as an original document, and the electronic signature of the Parties thereon, for purposes hereof, shall be considered as an original signature and the document transmitted electronically shall be considered to have the same binding effect as an original signature on an original document.

31. **ENTIRE AGREEMENT.** This Agreement, which includes the exhibits attached hereto, contains the entire agreement and understanding of the Parties with respect to the subject matter hereof, and supersedes and replaces any and all prior discussions, representations and understandings, whether oral or written. In case of conflict between any term of the Contractor's Bid/Proposal and this Agreement, the terms of this Agreement shall control unless otherwise stated herein.

32. **CAPTIONS.** The organization of this Agreement into articles, sections, paragraphs, or subparagraphs or the use of headings and subheadings are for convenience and reference only and will not modify or affect the meaning, interpretation, construction, or effect of this Agreement nor the rights, obligations, or liabilities of the parties under this Agreement.

33. **CALCULATION OF TIME PERIODS.** Unless otherwise provided herein, whenever this Agreement calls for or contemplates a period of time for the performance of any term, provision, or condition of this Agreement, all of the days in such period of time shall be calculated consecutively without regard to whether

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any of the days falling in such period of time shall be a Saturday, Sunday, or other non-business day; provided, however, if the last day of any period of time shall happen to fall on a Saturday or Sunday or legal holiday observed by the State of Georgia, the last day shall be extended to the next succeeding business day immediately thereafter occurring.

IN WITNESS WHEREOF, said parties have hereunto set their seals the day and year written below.

Executed on behalf of:

CLAYTON COUNTY WATER AUTHORITY		**CONTRACTOR**	
By:		By:	
Name:	H. BERNARD FRANKS	Name:	
Title:	Chief Executive Officer	Title:	
Attest:		Attest:	
Name:		Name:	
Title:		Title:	
Date:		Date:	

Division 3 Contract Forms

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EXHIBIT A

SCOPE OF GOODS AND SERVICES

THIS "EXHIBIT A" SHALL BE THE LANGUAGE AS SET FORTH IN DIVISION 4 SECTIONS 1, 2, AND 3 OF THE CONFORMED DOCUMENTS FOR RFB NUMBER 2024-PME-22.

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EXHIBIT B

PRICING

THIS "EXHIBIT B" SHALL BE THE LANGUAGE AS SET FORTH IN DIVISION 2 SECTION 4 OF THE CONFORMED DOCUMENTS FOR RFB NUMBER 2024-PME-22.

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EXHIBIT C

RISK MANAGEMENT REQUIREMENTS

THIS "EXHIBIT C" SHALL BE THE LANGUAGE AS SET FORTH IN DIVISION 2 SECTION 2 OF THE CONFORMED DOCUMENTS FOR RFB NUMBER 2024-PME-22.

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 "CCWA"), 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 CCWA, 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 General 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 CCWA 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 CCWA 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 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;

Division 3 Contract Forms

Section 2: Performance Bond

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 CCWA 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 CCWA.

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.

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)		**(Name of Contractor's Surety)**	
By:	_____	By:	_____
Name Printed:	_____	Name Printed:	_____
Title:	_____	Title:	_____
Attest:	_____	Attest:	_____
Name:	_____	Name:	_____
Date:	_____	Date:	_____
[Corporate Seal]		*[Corporate Seal]*	

(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 "CCWA"), 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 CCWA, 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 General 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 CCWA, or the filing of a Lien against the property of CCWA 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.

Division 3 Contract Forms

Section 3: Payment Bond

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.

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)		**(Name of Contractor's Surety)**	
By:	_____	By:	_____
Name Printed:	_____	Name Printed:	_____
Title:	_____	Title:	_____
Attest:	_____	Attest:	_____
Name:	_____	Name:	_____
Date:	_____	Date:	_____
[Corporate Seal]		*[Corporate Seal]*	

(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 General 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: _____
Bidder

By: _____
Name

By: _____
Name

Title: _____

Title: _____

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

Notary Public: _____ My Commission expires: _____

END OF SECTION

Division 3 Contract Forms

Section 5: Certification of Absence of Conflict of Interest.

CERTIFICATION OF ABSENCE OF CONFLICT OF INTEREST

(O.C.G.A. § 36-80-28)

The undersigned Contractor, who is entering into a contract or arrangement with the Clayton County Water Authority (CCWA), by signing below acknowledges and certifies to follow the requirements below:

(1) Contractor shall avoid any appearance of impropriety and shall follow all of CCWA's policies and procedures related to the project.

(2) Contractor discloses below any material transaction or relationship currently known to Contractor that reasonably could be expected to give rise to a conflict of interest, including, but not limited to, that of the Contractor, Contractor's employees, agents, or subsidiaries. (Include past, present, or known prospective engagements, involvement in litigation or other dispute, client relationships, or other business or financial interest):

_____
_____
_____
_____
_____

(3) Contractor shall immediately disclose any material transaction or relationship subsequently discovered during the pendency of the contract or arrangement.

(4) Contractor acknowledges that any violation or threatened violation of the agreement may cause irreparable injury to CCWA entitling CCWA to seek injunctive relief in addition to all other legal remedies.

_____ _____
NAME OF CONTRACTOR Name of Contractor's Authorized Official

_____
Signature of Contractor's Authorized Official

_____
DATE

END OF SECTION

Division 4 Specifications

Section 1: Work Assignment and Measurement

1.1 Overview

Work assignments under this contract will be initially offered to the Primary Contractor. Should start of a work schedule 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.

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.

1.2 General

A. This section provides 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 and all related work/specifications referenced in Division 4, Section 3.

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

B. 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.

C. 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.

D. 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.

E. The CCWA reserves the right to adjust the quantity of a Work Item up or down as necessary to address needs.

Division 4 Specifications

Section 1: Work Assignment and Measurement

1.3 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.
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.
3. Contractor shall commence work on-site within 24 hours of notice of emergency mobilization by CCWA. CCWA shall issue a Project Work Order prior to or concurrently with the start of work.

B. A Project Work Order will be for work items that are in a common geographic location. A common geographic location may be considered a business/industrial park, city block or residential subdivision.

C. Work of a Project Work Order shall be completed within the number of consecutive workdays mutually agreed to by the Contractor and the CCWA prior to the start of the work.

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.

Division 4 Specifications

Section 1: Work Assignment and Measurement

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

Work Item 1. Mobilization (Lowboy Service): Defined as utilizing tractor-trailer services to transport heavy equipment to and from a specific work site. The Work Item will be paid on a per "each" unit cost, once per project work order, in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 2. Mobilization (Emergency): Defined as 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-mobilization due to shutdowns 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 - 4. Performance and Payment Bonds: Defined as 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. The Work Item will be paid on a per "each" unit cost, for the Contractor's work ranging from $100,000 to $125,000 in value and then for each increment of additional $25,000 value, in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 5. Construction Exit: Defined as installing a construction exit in accordance with the "Manual for Erosion and Sediment Control in Georgia", latest edition and removing and disposing upon the completion of work. The Work Item will be paid on a per "each" unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 6 - 8. Sediment Barrier Installation: Defined as installing Silt Fence – Type A (NS), Silt Fence – Type C (S) 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 on a per “linear foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 9. Sediment Barrier Removal: Defined as removing and disposing, Silt Fence Type-A (NS), Silt Fence Type-C (S) or Hay Bales and stabilizing any subsequent disturbed soil in accordance with Work Items “Soil Stabilization”, as applicable. The Work Item will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 10. Curb Inlet Sediment Trap: Defined as installing a curb inlet sediment trap in accordance with the “Manual for Erosion and Sediment Control in Georgia”, latest edition and removing sediment trap and disposing upon the completion of work. The Work Item will be paid on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 11 - 14. Soil Stabilization: Defined as completing grading work and stabilizing soil in accordance with “The Manual for Erosion and Sediment Control in Georgia”, latest Edition. The Work Items 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 Item 15. Hauling Material from Outside of County: Defined as transporting construction related material to a work site and unloading material from a materials facility located outside of Clayton County. This Work Item is only applicable to CCWA provided material, when CCWA requests the Contractor to pick up material. The Contractor shall make every effort to fully load each truck for transportation. The Work Item will be paid on a per “hour” unit cost from the time leaving the facility outside of Clayton County to the time arriving at the work site in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 16 - 19. Tree Removal: Defined as removing from the work site and disposing, trees, their limbs, their 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 inches up from adjacent bare ground surface. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Division 4 Specifications

Section 1: Work Assignment and Measurement

Work Item 20. Easement Clearing: Defined as removing from the work site and disposing, all trees, their limbs, their stumps, tap roots, other roots exceeding 1-inch in diameter to a depth of at least 18 inches, brush and any other types of debris or materials in a permanent easement area and other areas as necessary within construction limits. Areas within construction limits having only mowed grass and asphalt/concrete pavement surfaces shall not be considered for easement clearing. The Work Item will be paid on a per "square foot" unit cost of construction limits cleared in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 21 - 22. Fence Work: Defined as 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, posts and accessories in accordance with manufacture instructions to match existing fence to complete the work. New fencing per property parcel will not be installed until all construction work has been completed on the property parcel. The Work Items will be paid on a per "linear foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 23 - 26. General Excavation: Defined as completing the excavation of soils and/or removal of structures, pipe and/or removal of other objects or debris to a required grade, dewatering as necessary and 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 on a per "in-place cubic foot" unit cost and applicable Detail in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 27. Rock Excavation: Defined as completing the removal, stockpiling and/or disposing of rock and replacing quantity of removed rock with suitable soil. The Contractor is responsible for repairs and/or replacement of damaged property(s) resulting from the work. The Work Item will be paid on a per "in-place cubic foot" unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 28 - 33. General Fill/Backfill: Defined as placing soil and/or stone of varying sizes in excavations as necessary. The Work Items may only be used

when work cannot be completed through other Work Items of the Contract. When CCWA decides to backfill to the top of existing grade with stone, the backfill work will be paid using this Work Item and will be measured from stone elevation shown in detail to existing grade. The Work Items will be paid on a per "in-place cubic foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 34 - 42. Stone Placement: Defined as completing the excavation to required grade and removing and disposing soil and debris, placing stone of varying sizes to construct or add to slope grades, access road or parking area at requested layer thickness. The Work Items will be paid on a per "square foot" unit cost and applicable Detail in accordance with the Pay Item Schedule and as authorized/approved by CCWA. Where "increment" is indicated, layer may be increased or decreased by indicated thickness.

Work Item 43. Gabion Basket Installation: Defined as assembling gabion baskets of various sizes at a requested location and installing stone of varying sizes into baskets. The Work Item will be paid on a per "cubic foot" unit cost in accordance with the Pay Item Schedule and as authorized/approved by CCWA.

Work Item 44. Geotextile Fabric Installation: Defined as installing and anchoring geotextile fabric at a requested location. Geotextile Fabric will be woven, or nonwoven fabric materials used to reinforce or separate soil and other materials. The Work Item will be paid on a per "square foot" unit cost in accordance with the Pay Item Schedule and as authorized/approved by CCWA.

Work Items 45 - 48. Remove Asphalt Pavement: Defined as saw cutting through asphalt surfaces, removing asphalt pavement from work site and disposing. 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 49 - 53. Remove Concrete Flat Work: Defined as saw cutting through concrete surfaces, removing concrete from work site and disposing. The Work Item will be paid on a per "square foot" unit cost or a per "linear foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 54 - 55. Milling Pavement: Defined as using milling machines or cold planers and milling at a 1 – 1/2-inch depth of the surface of paved areas such

as roads, bridges or parking lots and removing and disposing of debris. The work will consist of milling up to 1,500 square feet and will be paid per “each” unit cost in accordance with Pay Item Schedule as authorized/approved by CCWA. Where more square footage is required the work item will be paid on a per “square foot” unit cost in accordance with Pay Item Schedule as authorized/approved by CCWA.

Work Items 56 - 57. Asphalt Patching: Defined as 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. The Work Item will be paid on a per “square foot” unit cost 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 58 - 59. Asphalt Paving: Defined as 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 on a per “square foot” unit cost 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 60 - 65. Concrete Flatwork: Defined as installing concrete of varying thickness to a required grade. The Work Items for concrete will be paid on a per “square foot” unit cost in accordance with the Pay Item Schedule and applicable depth Detail as authorized/approved by CCWA. The Work Item “Wire Mesh” will be paid on a per “square foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA. The Work Item “Steel Reinforcement” will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 66 - 67. Curb and Gutter Replacement: Defined as completing concrete curb work to replace curb that has been removed or damaged due to construction. The Work Items will be paid on a per “linear foot” unit cost in

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

Work Item 68. Catch Basin Spillway Throat: Defined as completing concrete work to replace spillway throats that have been removed or damaged due to construction. The Work Item will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 69 - 70. Pavement Striping: Defined as installing a painted line of the appropriate color to asphalt and concrete surfaces of parking lots and roads. Sufficient paint shall be applied so that no asphalt or concrete color is visible through paint. The Work Items will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 71. Pavement Marking: Defined as installing a 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 on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 72. Pressure Washing: Defined as using a minimum 3,500 psi pressure washer and removing soil / mud and stains, without material damage, from asphalt and concrete surfaces. The Work Item will be paid on a per “square foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 73 - 112. Pumping: Defined as providing, operating and maintaining a complete pumping system for flow interruption during construction. Where Single is indicated, one pump and its associated system is to be provided. Where Redundant is indicated, one pump and its associated system of the same size as the single pump and equipped with call-out features is to be provided and integrated with the single pump system. The Work Items that provide the most cost savings will be selected for use. The Work Items will be paid on the per unit cost indicated in accordance.

Division 4 Specifications

Section 1: Work Assignment and Measurement

Work Items 113 - 114. Pipe Installation - Open Cut: Defined as installing copper "Type K" pipe of requested size at necessary grade and applicable fittings and making all necessary connections to the main (tee, tap or core) and to the meter; removal/reinstall or new installation of a new meter box is part of the Work Item. Upon completion of work, excavation shall be backfilled to required grade. Where Additional Footage is indicated, pipe is installed at lengths beyond that of 20 feet. The Work Item detailed as "Installation/Replacement" will be paid on a per "each" unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA. The Work Item detailed as "Additional Footage" will be paid on a per "linear foot" unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 115 - 116. Pipe Installation - Augered: Defined as completing bore pit and receiving pit excavations/backfill and installing copper "Type K" pipe of requested size by augering methods without casing at necessary grade and installing applicable fittings and making all necessary connections to the main (tee, tap or core) and to the meter; removal/reinstall or new installation of a new meter box is part of the Work Item. Where Installation/Replacement is indicated, up to 50 feet (length) of pipe is to be installed. Where Additional Footage is indicated, pipe is installed at lengths greater than 50 feet. The Work Item detailed as "Installation/Replacement" will be paid on a per "each" unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA. The Work Item detailed as "Additional Footage" will be paid on a per "linear foot" unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 117 - 119. Pipe Installation - Open Cut: Defined as installing copper "Type L" pipe of requested size at necessary grade and making all necessary connections. Upon completion of work, excavation shall be backfilled to required grade. 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 will be paid on a per "linear foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 120 - 122. Pipe Installation - Augered: Defined as, at locations as determined by CCWA, and completing bore pit and receiving pit excavations/backfill for an augered bore and installing copper "Type L" pipe of

requested size by augering methods without casing at necessary grade and making all necessary connections. Where the Contractor requests to auger instead of open cut out of convenience, the work will be paid using open cut unit pricing. The depth of work shall be determined by measuring from original ground surface to bottom of pipe. Linear foot shall refer to the length of pipe installed including connecting couplings. The Work Items will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 123 - 404. Pipe Installation - Open Cut: Defined as installing polyvinyl chloride (PVC), ductile iron (DI), steel reinforced concrete (RC), high density polyethylene (HDPE), corrugated metal (CM) or fiberglass reinforced polymer mortar (FRPM) pipe and solid sleeves / couplings of requested size at necessary grade and making all necessary connections to adjacent pipe and manholes. Upon completion of work, excavation shall be backfilled to required grade. This Work Item will also be used to excavate/backfill and remove pipe from the Work Site for disposal. This Work Item will also be used to excavate/backfill and install fittings, valve boxes and cored taps into pipes. Installation of fittings (other than solid sleeves / couplings) will be paid through another Work Item. Where Point Repair is indicated, up to 20 feet (length) of pipe 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 405 - 424. Pipe Installation – Open Cut: Defined as installing steel casing pipe of requested size at necessary grade and making all necessary connections. Upon completion of work, excavation shall be backfilled to required grade. The Contractor shall prepare ends of casing and continuously butt weld each joint. 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 casing installed. The Work Items 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. The Work Items detailed as “Weld” will be paid on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 425 - 445. Cased Bore: Defined as installing steel casing pipe of requested size and thickness using non steered or steered techniques. Where “Rock Bore” is indicated, the Work Item will be paid as an addition to the “Non Steered” Work Item. Where casings are removed to alter bore techniques, the work will be paid using “Hourly Labor” Work Items. The Work Items will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 446 – 449. Bore Entry Pit: Defined as constructing required excavations to facilitate cased bore work. Upon completion of work, excavations shall be backfilled to finish grade. The Work Items will be paid on a “vertical foot” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 450 – 453. Bore Receiving Pit: Defined as constructing required excavations to facilitate cased bore work. Upon completion of work, excavations shall be backfilled to finish grade. The Work Items will be paid on a “vertical foot” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 454 - 460. Pipe Insertion into Steel Casing: Defined as installing PVC or DI piping of requested size through a steel casing, installing restraining joint gaskets, installing a minimum of three casing spacers per piece of pipe and installing flexible rubber casing seals. Linear foot shall refer to the length of pipe installed inside the casing. The Work Items will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 461 - 462. Directional Drill Boring: Defined as completing horizontal controlled bores of various lengths and depths to explore subsurface conditions as related to pipe work. The directional drill will use a 4-inch diameter pilot bit with 2-inch diameter drill rods. Drill shall have a dual-frequency radio transmitter attached behind the pilot bit that continually communicates the drill position to a radio

receiver at the ground surface to determine drill location, depth, and steer. Boring shall be filled with inert material and abandoned in accordance with state regulations. The Work Item “Directional Drill Boring” will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule as accepted/approved by CCWA. The Work Item “Directional Drill Mobilization” will be paid on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 463 - 466. Polyethylene Pipe Encasement: Defined as installing tube-type polyethylene over piping of requested size during pipe installation operations and securing open ends of polyethylene with tape. Linear foot shall refer to the length of polyethylene installed. The Work Items will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 467 - 475. Core into Pipe: Defined as installing a tapping sleeve or saddle, installing required valve and completing wet tap core or dry tap core into PVC, DI or CI pipe. This Work Item is not for use with making service taps. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 476 - 484. Connect Fitting / Valve to Pipe: Defined as working above grade or below grade, cutting pipe as necessary and connecting Brass / Bronze, PVC, DI or rubber fitting or valve or fitting(s) / valve(s) assembly to pipe. using threaded, flared, ProPress®, push-on joint, sleeved standard mechanical, MJ Field-Lock®, MEGALUG® or banded connection methods, cutting to length and installing necessary pipe nipples. A valve installed as part of the Work Item “Core Into Pipe” is not part of this Work Item. Each shall refer to each individual fitting or valve installed. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 485 - 487. Fire Hydrant Installation: Defined as installing the requested Fire Hydrant and extension kits as necessary, cutting and installing pipe nipple up to 5-feet in length, making connections to valve. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

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Work Item 488. Fire Hydrant (Existing) Vertical Adjustment: Defined as installing / removing requested extension kits, reassembling hydrant. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 489 - 491. Fire Hydrant Removal: Defined as removing fire hydrant and piping, up to 5 linear feet, to valve and disposing, installing mechanical plug on valve. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 492. Air / Vacuum Release Valve Installation: Defined as assembling and installing an air / vacuum release valve(s) or assembly of various sizes onto a threaded or flanged tapping saddle or sleeve. Shut-off valves, bends, thread sealant associated with the valve(s) shall be installed as part of the Work Item. The Work Item will be paid on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 493 - 496. Concrete Thrust Restraint: Defined as installing cast-in-place concrete thrust restraint tie-back or block for the specified pipe size. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 497. Pipe Collar Installation: Defined as installing a pipe collar at locations requested by CCWA. The Work Item will be paid on a per “cubic foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 498 - 501. Flared End Section Installation: Defined as removing existing flared end section as may be required, installing a new flared end section or repositioning an existing flared end of RC, HDPE or Metal and of the indicated size. Remove excess or unsuitable soil, debris and existing flared end as necessary and dispose. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 502 - 509. Precast Headwall Installation: Defined as removing an existing headwall and disposing as may be required, installing a new precast concrete headwall or repositioning an existing precast concrete headwall of the indicated size. Upon completion of work, excavation shall be backfilled to required

grade. Remove excess or unsuitable soil and debris as necessary and dispose. 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. The Work Items will be paid on a per "each" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 510 - 523. Precast Manhole Installation: Defined as installing a precast concrete manhole of requested size. Where applicable, provide and install brick and mortar to seal annular space between manhole and piping. Upon completion of work, excavation shall be backfilled to required grade. This Work Item may also be used to excavate and install additional riser sections or remove / replace riser sections. The base and riser diameter of a manhole will be determined by measuring the inside diameter. The riser above the base will be measured vertically from the top of the constructed manhole invert to the top of a reducer slab or to the top of a cone section if a reducer slab is not installed. The riser above the reducer slab will be measured for diameter and vertically from the top of the reducer slab to the top of the cone section. The Work Items for manhole base slab will be paid on a per "each" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA. The Work Items for manhole riser height will be paid on a per "vertical foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 524 - 531. Precast Box / Vault Installation: Defined as installing a precast concrete vault of requested size. Upon completion of work, excavation shall be backfilled to required grade. The size of the structure will be measured using interior wall dimensions. The riser above the base will be measured vertically from the top of the constructed invert to the top of the top slab. The Work Items for base slab will be paid on a per "each" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA. The Work Items for riser height will be paid on a per "vertical foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

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Work Items 532 - 545. Manhole Invert Construction: Defined as installing concrete or brick and mortar channels of the necessary shape and size in manholes to direct flow. Remove related debris from the work site. The size of invert construction will be determined by measuring the inside diameter of the manhole base. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 546 - 547. Other Invert Construction: Defined as installing concrete or brick and mortar channels of the necessary shape and size to direct flow. Remove related debris from the work site. The size of invert construction will be determined by measuring the inside shape of the structure base. The Work Items 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 548 - 549. Ring and Cover Installation: Defined as 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. Where CCWA decides to backfill to the top of existing grade with stone, the backfill work will be paid from Work Items “General Fill/Backfill” on a per “in-place cubic foot” and will be measured from stone elevation shown in details to existing grade. The Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 550. Precast Catch Basin Spillway Installation: Defined as installing precast concrete catch basin spillway of various sizes. Upon completion of work, excavation shall be backfilled to required grade. The Work Item will be paid on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 551. Precast Catch Basin Top Slab Installation: Defined as installing precast concrete catch basin top slab of various sizes. The Work Item will be paid on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 552 - 555. Concrete Core: Defined as coring a hole of a requested size through existing concrete / steel reinforced concrete of varying thicknesses, loading 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 on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 556 - 559. Brick Work: Defined as installing brick and mortar to form walls of varying thickness and constructing boxes / vaults of requested sizes. Remove related debris from the work site. 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 on a per “square foot” unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 560 - 562. Concrete Work: Defined as setting formwork for footing, vertical wall, elevated slab and/or pier construction and placing concrete. Remove formwork and related debris from the work site. The “Bulk” description is the concrete provided for the work. The “Form Work” description is form work needed for vertical wall construction or elevated slab construction including all plywood, fiberglass, whalers, snap ties, form release agent, and incidentals to complete the work. The “Steel Reinforcement” description is for steel bars, supporting chairs and tie wire. The Work Item “Bulk” 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 “Form Work” will be paid on a per “square foot” unit cost in accordance with the Pay Item Schedule as accepted/approved by CCWA. The Work Item “Steel Reinforcement” will be paid on a per “linear foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 563 - 565. Cementitious Grouting: Defined as installing necessary piping and/or bulk heads to facilitate the work, placing grout and completely filling pipe or repairing pipe invert or other work as may be necessary and removing and loading for disposal 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 “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 “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 "Pump Mobilization" will be paid on a per "each" unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 566 - 567. Chemical Grouting: Defined as 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 "Grout" will be paid on a per "gallon" unit cost in accordance with the Pay Item Schedule as accepted/approved by CCWA. The Work Item "Pump Mobilization" will be paid on a per "each" unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 568 - 569. Pressure Testing: Defined as completing a low-pressure air test or a hydrostatic pressure test on newly installed pipe. Where newly installed pressure pipe is separated by existing piping, newly installed pressure pipe will be tested independently from each other. The Work Items will be paid on a per "each" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 570. CCTV Testing: Defined as completing a CCTV inspection on newly installed pipe. The Work Items will be paid on a per "linear foot" unit cost in accordance with the Pay Item Schedule as measured in pipe horizontally from the end of pipe where televising starts to where televising stops at the end of the pipe segment and applicable Detail as authorized/approved by CCWA.

Work Item 571. Deformation Testing: Defined as completing a deformation test on newly installed pipe. The Work Items will be paid on a per "linear foot" unit cost in accordance with the Pay Item Schedule as measured in the pipe horizontally from the end of pipe where testing starts to the end of the pipe segment where the pipe stops, and applicable Detail as authorized/approved by CCWA.

Work Item 572. Pipe Disinfection: Defined as completing disinfection procedures on newly installed pipe using a sodium hypochlorite solution. The Work Item will be paid on a per "gallon" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 573 - 578. Hourly Labor: Work Items shall be utilized on a case-by-case basis. Defined as 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. The Work Items will be paid on a per "hour" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 579- 591. Hourly Equipment: Work Items shall be utilized on a case-by-case basis. Defined as 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. The Work Items will be paid on a per "hour" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 592. Traffic Control Rental: Work Item shall be utilized on a case-by-case basis. Defined as preparing, securing and implementing an approved Georgia Department of Transportation traffic control plan and utilizing lighted message boards and road/lane blockage devices and signs required by the MUTCD manual to close lanes of traffic or a road and detouring traffic while actively performing work in lanes of traffic. 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. 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 593. Equipment Rental: Work Item shall be utilized on a case-by-case basis. Defined as 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. 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 594. Supplied Material: Work Item shall be utilized on a case-by-case basis. Defined as furnishing material, not included as part of other Work Items, needed to complete the work. The Work Item will be paid at invoice cost plus a

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

Work Item 595. Specialty Services: Work Item shall be utilized on a case-by-case basis. Defined as 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. 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

Division 4 Specifications

Section 2: Material Requirements

2.1 General

A. This section describes in general the materials that are to be provided for the work.

B. The material conformance reference forms a part of the specifications to the extent stated herein and shall be of the latest editions.

C. All materials provided shall be new and domestically manufactured unless approved otherwise.

D. An indication is provided in each below section of whether the material is to be provided by the Contractor or provided by CCWA.

E. Where a material is required and not specifically described below, the material shall be provided by the Contractor.

2.2 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.

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 catholically 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.
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.

2.3 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.

Division 4 Specifications

Section 2: Material Requirements

C. Pipe and fitting description.

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.

2.4 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.

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.

2.5 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.
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.

2.6 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.
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.

2.7 Fiberglass Reinforced Polymer Mortar Pipe

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM D3262: Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer Pipe.
2. ASTM D4161: Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals.
3. ASTM D2412: Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.

4. ASTM D3681: Standard Test Method for Chemical Resistance of "Fiberglass" (Glass–Fiber–Reinforced Thermosetting-Resin) Pipe in a Deflected Condition.
5. ASTM D638: Standard Test Method for Tensile Properties of Plastics.
6. ASTM D4161: Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals.
7. ASTM F477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

C. Pipe Description.

1. Pipe shall be push on pipe, minimum pressure class 25, stiffness class 46 unless indicated otherwise.
2. Outside pipe diameters shall be per manufacturer's literature.
   a) Outside diameter shall be a consistent tolerance throughout the entire barrel length.
   b) All pipe shall be "Adjustment" grade and quality.
3. Pipe ends shall be square to the pipe axis with a maximum tolerance of 1/8-inch.
4. The following information shall be stamped or painted on each pipe.
   a) Manufacturer's identifying mark.
   b) Pipe diameter.
   c) Pressure class.
   d) Stiffness class.
5. Nominal length per joint of pipe is 20 feet. Actual laying length shall be nominal +1, -4 inches.
6. Joint lubricant as provided by manufacturer.

D. Coupling and Gasket description.

1. Pipe joint unless otherwise specified shall be field connected with fiberglass sleeve coupling.
2. Gaskets shall be plain rubber suitable for sanitary sewer service. Gasket shall be full-face elastomeric or o-ring style with centered pipe stop.

3. Each piece of pipe shall be fitted with a coupling by the manufacturer prior to shipping.

Acceptable Manufacturers

- As Approved.

2.8 Copper Pipe and Fitting

A. Material provided as follows.

1. Copper pipe provided by CCWA.
2. Fittings provided by Contractor.

B. Material conformance reference.

1. ASTM B88: Standard Specification for Seamless Copper Water Tube.
2. ASTM B124: Standard Specification for Copper and Copper Alloy Forging Rod, Bar, and Shapes.
3. ASTM B124: Standard Specification for Copper and Copper Alloy Forging Rod, Bar, and Shapes.
4. ANSI B16.22: Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

C. Pipe Description.

1. Buried service three-quarter (¾) inches in diameter to one (1) inch in diameter shall be seamless, annealed copper tube, Type “K”.
2. Buried service greater than one (1) inch in diameter shall be hard-drawn copper tube, Type “L”.
3. Exposed or above-ground service shall be hard-drawn copper tube, Type “L”.

D. Fitting Description.

1. Fittings for annealed copper tube, Type “K”, shall be brass flared type.
2. Fittings for hard-drawn copper tube, Type “L”, shall be wrought copper suited for silver brazed joints or ProPress type fitted with EPDM gaskets.
3. Lead free solder and flux shall be used in making connections where applicable.

4. Meter couplings and tail pieces shall be cast brass threaded type.

Acceptable Manufacturers

- As Approved.

2.9 Steel Casing

A. Casing material only provided by CCWA. Other items to install a casing, i.e. gear box, water tube, black iron piping, etc., will be provided by the contractor.

B. Material conformance reference.

1. ASTM A252: Standard Specification for Welded and Seamless Steel Pipe Piles.

C. Description.

1. Casing steel shall be uncoated with minimum mechanical properties of a Grade 2.
2. Casing steel wall thickness will range from a base thickness of 0.25 inch to 1.0 inch with end treatments being a 30^{o} bevel or square (when requested).
3. Nominal length per joint of casing is 20 feet.

Acceptable Manufacturers

- As Approved.

2.10 Casing Spacer

A. Material provided by CCWA.

B. Description.

1. Spacer body shall be constructed of 14-gauge stainless steel (Type 304) in widths from 8 to 12 inches.
2. Spacer riser shall be 10-gauge stainless steel with a minimum width of 2 inches. Spacer shell shall be fitted with a minimum of four risers, welded.
3. Each riser shall be capped with a glass filled polymer runner. Runner shall be attached to riser using stainless steel bolts and nuts.
4. Make up of spacer shall center pipe in casing and limited radial movement of pipe within the casing to no more than ¾ inch.

Acceptable Manufacturers

- As Approved.

2.11 Casing End Seal

A. Material provided by CCWA.

B. Description.

1. End seal shall be minimum 1/8-inch thick neoprene rubber.
2. End seal may be pull-on or wrap-around and secured using stainless steel (Type 304) banding, ½-inch width.

Acceptable Manufacturers

- As Approved.

2.12 Pipe Transition Coupling

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM A513: Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing. Rigid coupling requirement.
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 Rigid coupling requirement.
3. ASME SA36: Hot-rolled Common Carbon structural steel. Rigid follower requirement.
4. AWWA C111/ANSI A21.11: Standard for Tape Coating Systems for the Exterior of Steel Water Pipelines. Bolt requirement.
5. ASTM D5926: Standard Specification for Poly (Vinyl Chloride) (PVC) Gaskets for Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Systems. Flexible material requirement.
6. ASTM C1173: Standard Specification for Flexible Transition Couplings for Underground Piping Systems. Flexible coupling requirement.

C. Rigid Coupling.

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).

D. Flexible Coupling

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

- Dresser.
- Smith Blair.
- Fernco.
- As Approved.

2.13 Tapping Sleeve

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM A536: Standard Specification for Ductile Iron Castings.
2. ANSI/AWWA C110/A21.1: Ductile-Iron and Gray-Iron Fittings.

C. Description.

1. Sleeve shall be of the split type and manufactured of ductile iron or stainless steel (preferred).
2. Stainless steel (Type 304:18-8) sleeve shall be used when tapping cast iron pipe.
3. Sleeve outlet shall be flanged or mechanical joint.
4. Gaskets shall be virgin nitrile (Buna-N, NBR).
5. Sleeve coating shall be in accordance with NSF 61.

Acceptable Manufacturers – Product

- U.S. Pipe – T28 on ductile iron main only.
- Power Seal– Part No. 3490 (stainless steel) on cast iron and ductile iron mains.
- Smith Blair – Part No. 663 or 665 (stainless steel) on cast iron and ductile iron mains.
- Ford Meter Box– FTSS (stainless steel).
- Romac for 1-1/2 inch and 2-inch taps.
- As Approved.

Division 4 Specifications

Section 2: Material Requirements

2.14 Tapping Saddle

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM A240: Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
2. ASTM A276: Standard Specification for Stainless Steel Bars and Shapes.
3. ASTM A193 and A194: Standard Specification for Alloy-Steel and Stainless-Steel Bolting for High Temperature or High-Pressure Service and Other Special Purpose Applications. Bolt/Nut requirement

C. Description.

1. Tapping saddle shall be stainless steel (Type 304: 18-8).
2. Tapping saddle shall seal with pipe by an O-ring gasket (Buna-N, NBR).
3. Saddle outlet to pipe shall be flanged or tapped with pipe threads.

Acceptable Manufacturers - Product

- Smith Blair - 313 with 015 stainless steel bales (4” to 16”) for 2” iron pipe threads.
- Smith Blair - 366 with 015 stainless steel straps (18” to 40”) for 2” iron pipe threads.
- Smith Blair – 372 for pipe diameters 4 inches through 12 inches.
- Powerseal – 3412AS for pipe diameters 3 inches through 12 inches.
- Powerseal – 3416AS for pipe diameters 14 inches through 36 inches.
- Ford Meter Box– FS 303.
- Romac - 306 for pipe diameters 3 inches through 12 inches.
- Romac - 305 for pipe diameters 14 inches through 24 inches.
- As Approved.

2.15 Gate Valve

A. Material Provided by CCWA.

B. Material conformance reference.

1. AWWA 509: Resilient-Seated Gate Valves for Water Supply Service.

2. AWWA 515: Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service.
3. AWWA/ANSI C550 and C121/A21.16: Protective Interior Coatings for Valves and Hydrants.

C. Description.

1. Valve shall be 250 psi pressure class.
2. Valve body shall be ductile iron with all exterior surfaces coated with a fusion-bonded epoxy coating.
3. Valve shall be bronze mounted, beveled geared, with a non-rising stem and O-ring stem seals.
4. All exposed fasteners, nuts and bolts shall be stainless steel.
5. Valve shall open in a counterclockwise direction.
6. Valve end connections shall be flanged or standard mechanical.
7. Buried valves shall be nut operated; non-buried valves shall have hand-wheel operators.
8. Valve used in conjunction with a tapping saddle shall be as follows.
   a) Offset type that allows the tapping device to mount to the pipe and pass through the opened valve.
   b) End connection to the tapping sleeve shall be flanged. End connection to accept pipe shall be mechanical joint.
9. Valve exterior shall be coated with six (6) to eight (8) mils of fusion bonded epoxy. Valve shall be listed by a certifying agency that the coating complies with ANSI/NSF 61.
10. The following information shall be stamped on each valve.
    a) Manufacturer's identifying mark.
    b) Pressure Class.
    c) The letters "DI" or DUCTILE.
    d) Place of Manufacturing.

<u>Acceptable Manufacturers</u>

- American Darling.
- U.S. Pipe Company.
- Mueller Company.
- M&H Valve Company.

Division 4 Specifications

Section 2: Material Requirements

2.16 Plug Valve

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM A126: Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
2. ASTM A743: Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application.
3. ANSI 125/150: Material requirement
4. AWWA C111-64: Mechanical joint requirement

C. Description.

1. Plug shall be as follows.
   a) Eccentric plug (non-lubricated) having a 100% full-port design.
   b) Plug shall be cast iron.
   c) Plug shall have a resilient facing of carboxylic acrylonitrile butadiene or chloropene.
2. Valve shall be generally comprised as follows.
   a) Body shall be cast iron, Class B.
   b) Seat shall be nickel, raised and welded to the body.
   c) Bearings shall be oil impregnated permanently lubricated stainless steel Type 316, Grade CF-8M.
   d) Packing shall be acrylonitrile butadiene V-type.
3. End connections shall be as follows.
   a) Non-buried service shall have flanged ends having a 125/150-pound rating standard face and drilled.
   b) Buried service shall have standard mechanical joint ends with retaining gland that acts as a restraining mechanism.
4. Actuator type shall be as follows.
   a) Non-buried service shall have G-series worm gear with 8-inch diameter hand wheel actuator input, clockwise to close.
   b) Buried service shall have G-series worm gear for buried service, with 2-inch square nut actuator input, clockwise to close.
5. Valve interior and exterior surfaces shall have one (1) coat, 4 to 5 mils of TNEMEC 140 Pota-Pox Plus epoxy paint, surface preparation of SSPC-SP10.

Division 4 Specifications

Section 2: Material Requirements

Acceptable Manufacturers

- Dezurik.
- As Approved.

2.17 Valve Box

A. Material provided by CCWA.

B. Description.
1. Valve box shall be of the two-piece type and manufactured of cast iron.
2. Section assembly shall be either slip or screw.
3. Internal diameter is 5.25 inches.
4. Valve box shall be fitted with a cast iron cover with the word “WATER” or “SEWER” integrally cast in the cover depending on the service.

Acceptable Manufacturers

- Bingham-Taylor.
- As Approved.

2.18 Corporation Valve

A. Material provided by CCWA.

B. Material conformance reference.
1. ASTM B61 and B62: Standard Specification for Steam or Valve Bronze Castings.

C. Description.
1. Valve shall be of the ball valve type and manufactured of bronze complying with NSF 61.
2. Valve shall be suited for a minimum working pressure of 150 psi.
3. Valve shall have crosscut threading, for direct tap into pipe, and a flared copper outlet.
4. Valve shall be ¾ inch or one (1) inch in size as required by the service.

Acceptable Manufacturers

- Ford Meter Box Co.
- Mueller Brass.
- A.Y. McDonald Mfg.
- As Approved.

Division 4 Specifications

Section 2: Material Requirements

2.19 Curb Stop Valve

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM B61 and B62: Standard Specification for Steam or Valve Bronze Castings.

C. Description.

1. Valve shall be of the ball valve type and manufactured of bronze and comply with NSF 61.
2. Valve shall be suited for a minimum working pressure of 150 psi.
3. Internal ball shall be manufactured of low carbon steel coated with brass.
4. Internal O-rings and seats shall be of Buna-N.
5. Valve shall be fitted with iron pipe threads on the influent side and flared copper on the discharge side.
6. Valve shall be fitted with wing locks suitable to accept a keyed padlock.
7. Valve shall be ¾ inch, one (1) inch or two (2) inches in size as required by the service.

Acceptable Manufacturers

- Ford Meter Box Co.
- Mueller Brass.
- A.Y. McDonald Mfg.
- As Approved.

2.20 Fire Hydrant

A. Material provided by CCWA.

B. Material conformance reference.

1. AWWA C502: Dry-Barrel Fire Hydrants.

C. Description.

1. Fire hydrant shall be of the compression type, closing with line pressure, in compliance with NFPA, 1993 edition.
2. Hydrant shall have a 4-1/2 inch main valve and a non-freeze design with an automatic drain that closes fully when main valve is opened.

3. Hydrant shall be furnished having factory burying depths of 4'-6" or 5'-0". Deeper burying depths shall be accomplished using extension kits provided by same manufacturer.
4. Break-away device shall be situated +/- 3 inches from finished grade.
5. Hydrant standpipe, fittings and upper barrel shall be ductile iron. Parts designed to break away may be cast iron.
6. Hydrant bolts below ground level shall be stainless steel.
7. Hydrant lead to main line connection shall be mechanical joint.
8. The means of attaching the barrel to the standpipe shall permit 360º rotation of the barrel.
9. Hydrant barrel shall break away from the standpipe at an elevation above ground level without causing damage to the standpipe and stem. When barrel is broken away, internal valve shall function, and repairs shall be permitted without excavating or turning off water supply.
10. Hydrants shall be bronze mounted, and all internal working parts shall be bronze. Valve seat shall screw into retainer.
11. Internal working parts shall be removable without disturbing the barrel.
12. The operating nut situated atop the hydrant shall be hexagonal and constructed of ductile iron or cast iron and open in a counterclockwise direction. The threads shall be enclosed in an operating chamber separated from the hydrant barrel by a rubber O-ring stem seal lubricated by a grease or oil reservoir.
13. Hydrant shall be equipped with two 2-1/2 inch threaded (7.5 threads per inch) hose connections and one 4-1/2 inch threaded (4 threads per inch) hose connection. Hose and pump connections shall be threaded and pinned to seal the connection to the barrel. Threads shall comply with National Standard Threads. Each connection shall be equipped with a cap and chain.

Acceptable Manufacturers

- American - Darling M73.
- U.S. Pipe - M94.
- Mueller Company - A421: Ductile Iron Hydrant
- M&H Valve Company - 129: Ductile Iron Hydrant

2.21 Post Hydrant

A. Material provided by CCWA.

Division 4 Specifications

Section 2: Material Requirements

B. Material conformance reference.

1. AWWA C502: Dry-Barrel Fire Hydrants.

C. Description.

1. Fire hydrants shall be of the compression type, closing with line pressure.
2. Hydrant shall have a minimum 2-1/8-inch main valve and a non-freeze design with an automatic drain that closes fully when main valve is opened.
3. Hydrant standpipe, fittings and upper barrel shall be ductile iron.
4. Hydrant internal components shall be brass, bronze and aluminum.
5. Hydrant lead to main line connection shall be mechanical joint.
6. Hydrant shall be equipped with one 2-1/2-inch threaded hose connection.

Acceptable Manufacturers

- M&H Valve Company – 2-1/4 Post Hydrant
- Kupferle Foundry Company – Eclipse #2 Post Hydrant
- As Approved

2.22 Air/Vacuum Release Valve

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM A126: Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
2. ASTM A240: Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
3. ASTM A269: Standard Specification for Seamless and Welded Austenitic Stainless-Steel Tubing for General Service.
4. ASTM A 276: Standard Specification for Stainless Steel Bars and Shapes.
5. ANSI 125/150: Material requirement
6. PH 15-7 MO: Material requirement

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C. Description.

1. Valve shall automatically release large quantities of air during pipeline filling and automatically allow air to reenter the pipeline when internal pressure of the pipeline approaches a negative value (vacuum). Valve shall automatically release small quantities of air from the pipeline while under normal pressure conditions.
2. Valve shall be suitable for the respective service (water or sanitary sewer) having a working pressure of 150 psi and a test pressure of 225 psi.
3. Valve inlet and outlet shall be sized as required. Where the option permits, 125-pound flanged connections shall be utilized.
4. Valve body, cover and baffle shall be cast iron, Class B.
5. Seat and orifice button shall be Buna-N.
6. All internal components shall be stainless steel T304.

Acceptable Manufacturers

- Val-Matic Valve and Manufacturing Corp.
- As Approved.

2.23 Water Meter Box (Residential and Light Commercial)

A. Material provided by CCWA.

B. Description.

1. Meter box shall be manufactured from high-density polyethylene or fiber reinforced plastic.
2. Box lid shall be fiber reinforced plastic.
3. Minimum outside dimensions of the lid shall be 16-5/8 inches by 11-7/16 inches.
4. Down legs on each corner shall be a minimum of 1-1/2 inches long.

Acceptable Manufacturers

- D/FW Plastics.
- CDR – 24 inches by 60 inches for 1-1/2 inch and 2-inch meter assemblies.
- Other Approved.

2.24 Polyethylene Tube

A. Material provided by Contractor.

B. Material conformance reference.

1. ANSI/AWWA C105/A21.5: Polyethylene Encasement for Ductile-Iron Pipe Systems.
2. ASTM A674: Standard Practice for Polyethylene Encasement for Ductile Iron Pipe for Water or Other Liquids.

C. Description.

1. Linear low-density polyethylene with a density range of 0.910 to 0.935
2. Tube thickness shall be minimum 8 mil (0.008 inches).
3. Tube shall be supplied in roll without perforations or perforated at 20-foot intervals.
4. Tube shall be “black” in color.
5. The following information shall be randomly printed on the tube.
   a) Manufacturer’s identifying mark.
   b) Applicable range of nominal pipe diameter.
   c) ANSI/AWWA C105/A21.5.

Acceptable Manufacturers

- As Approved.

2.25 Utility Marking Tape

A. Material provided by Contractor.

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.

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.

2.26 Pipe Tracer Wire

A. Material provided by Contractor.

B. Description.

1. Wire shall be minimum No. 12 American Wire Gauge (AWG), fully annealed.
2. Wire shall be 1055 high grade steel clad with copper.
3. Wire shall be insulated with a minimum of 30 mil high density polyethylene coating suitable for buried service.
4. Wire coating shall be color-coded as follows.
   a) "Blue" for potable water and associated lines.
   b) "Green" for sanitary sewer and associated lines.
5. Connectors shall be mechanical as provided by wire manufacturer.

Acceptable Manufacturers

- As Approved

2.27 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.

2.28 Sodium Hypochlorite

A. Material provided by Contractor.

B. Material conformance reference.

1. AWWA C651: Disinfecting Water Mains.

C. Description.

1. Liquid containing 6 percent sodium hypochlorite solution intended for use as disinfection of potable water.

Acceptable Manufacturers

- As Approved.

2.29 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.
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. Concrete Structures

1. Headwalls, catch basins, spillways, etc. shall comply with Georgia Department of Transportation standards and/or standard practices of each manufacture.

D. Manhole 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.
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.

E. Step Description.

1. Manhole sections of four (4) foot diameter only shall be fitted with polypropylene plastic-coated steel steps unless indicated otherwise.
2. Steps shall be integrally cast into manhole sections.

3. Steps shall be twelve (12) inches wide and spaced at 1’0" on center.

F. Joint Sealant Description.

1. Joints between each section shall be sealed watertight 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.

G. 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.

H. 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.
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.

I. 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.

J. 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 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

- Manhole and Other Structures– As Approved.
- Ring, Frame, Cover – As Approved.
- HDPE Liner – Agru America (HDPE AGRU Sure Grip).

2.30 Manhole Invert Sealing Compound

A. Material provided by Contractor.

B. Description.

1. Liquid compound that penetrates concrete and mortar providing a seal against the effects of hydrogen sulfide and sulfuric acid.

Division 4 Specifications

Section 2: Material Requirements

Acceptable Manufacturers

- Navion, Inc. – RadonSeal
- Crystal Lok.
- As Approved.

2.31 Concrete and Reinforcement

A. Material provided by Contractor.

B. Material conformance reference.

1. ACI 318: 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.
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 – W2.1xW2.1wire 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.

2.32 Grout

A. Material provided by Contractor.

B. Description.

1. Minimum 200 psi, cement/sand high-flow mixture, commercial readily available.

Acceptable Manufacturers

- As Approved.

2.33 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.
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.

2.34 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.

2.35 Construction Stone

A. Material provided by Contractor.

B. Material conformance reference.

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.

Division 4 Specifications

Section 2: Material Requirements

Acceptable Manufacturers

- As Approved.

2.36 Pipe Collar (Anti Seep)

A. Material provided by Contractor.

B. Description.

1. Bentonite-clay coated aggregate.

Acceptable Manufacturers

- Aqua-Blok.
- As Approved.

2.37 Steel (Tie-Back)

A. Material provided by Contractor.

B. Material conformance reference.

1. ASTM A36: Standard Specification for Carbon Structural Steel.

C. Steel Description.

1. Steel shall be a W Shape designation, size W6 x 25.
2. Steel shall be length as required by detail.
3. Steel surface shall be clean and prepared to receive coating system.

D. Coating Description.

1. Steel shall be coated with a bitumastic coating suited for buried service.
2. Coating shall be applied and fully cured before installation in accordance with manufacturer instructions.

Acceptable Manufacturers

- Steel - As Approved.
- Coating: Carboline – Bitumastic 300M.
- Coating: Royston Roskote - A51 Plus Mastic.
- As Approved.

2.38 Steel Rod

A. Material provided by Contractor.

B. Material conformance reference.

1. ASTM F593: Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
2. ASTM F594: Standard Specification for Stainless Steel Nuts.

C. Description.

1. Steel rod shall be all-thread, ¾-inch diameter having standard National Pipe Threads.
2. Steel rod shall be one continuous piece. Mechanical or welded splices are prohibited.
3. Steel rod, nut and washer shall be stainless steel, grade 304.

Acceptable Manufacturers

- As Approved.

2.39 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

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

3.1.1 Project Submittals

A. This section describes the minimum information that is required to be provided by the Contractor upon contract execution to facilitate the work.
   1. The Contractor shall schedule and make submissions as to cause no delay in the work and/or Time for Completion of Project.
   2. Additional information may be requested as indicated in the Contract Documents.

B. Material Submittals: The Contractor shall submit to the CCWA for approval to use, product information on all materials required to be provided by the Contractor unless noted otherwise.
   1. Material 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.
   2. Where a material manufacturer is not specified, the Contractor shall submit for use domestically manufactured materials.
   3. 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.
   4. 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.

5. Materials provided by the Contractor not approved by the CCWA shall be subject to rejection without further justification.
6. Upon receipt of a material submittal, the CCWA shall complete its review and return CCWA comments to Contractor within 10 business days.

C. Submittals to be provided with each Application for Payment.
1. Document(s) to support requested payment.
2. Applicable Waiver and Release Upon Payment Affidavit with original seal and signature.
3. SLBE Participation Report (Form SLBE-4).

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. The Contractor shall not

further disturb such condition or perform any work in connection therewith (except as aforesaid) until receipt of a 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, 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 Land Disturbance Permits

A. When applicable, CCWA shall obtain necessary Land Disturbance Activity (LDA) permits from the local issuing authority and pay

associated fees. The Contractor shall have a copy of the LDA permit and construction plan (as applicable) stamped approved by the local issuing authority on the job site whenever work is being performed.

3.1.5 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.

B. The work may be accessed on paved surfaces or non-paved surfaces. The 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

3.1.6 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.

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. The 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. CCWA shall not be responsible for or compensate the Contractor for the damage to and/or loss of Contractor's equipment as result of the work.

H. Note that some Project sites may be situated within a 100-year flood zone. Take precautions to protect work, equipment and materials. CCWA shall not be responsible or compensate the Contractor for the damage to and/or loss of Contractor's equipment as result of flooding.

3.1.7 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.

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.

   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.

E. The Contractor shall remove and dispose all construction related debris associated with their work.

F. The burning of materials is not permitted on the Project site or other CCWA property.

3.1.8 Temporary Utilities

A. CCWA shall provide the Contractor with 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.

C. The Contractor shall provide any necessary electrical power.

Division 4 Specifications

Section 3: Construction Standards

3.1.9 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 the 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

3.1.10 Material Testing Services

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

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 Site Work

3.2.1 General

A. Display permits and contact respective agencies as required by applicable permit conditions.

B. Locate existing utilities in accordance with state and local regulations.

C. Prior to commencing any on-site work, establish perimeter erosion control measures, orange safety fencing and construction exits as may be required.

3.2.2 Traffic Control

A. Provide and maintain a safe work site. The Contractor should assume that traffic control and detours are required for all work.
   1. Provide to CCWA 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.
      a) Contractor shall provide traffic control plan to CCWA a minimum of five (5) business days in advance of the start of work.
   2. Provide traffic safety devices including cones, signs, flashing lights, and other necessary safety equipment necessary to comply with local jurisdiction requirements and standard industry practices.
      a) A minimum of two Department of Transportation (D.O.T.) certified Flaggers shall be required when directing traffic and/or closing any lane or road.

3. CCWA will submit to the local agency for approval and maintain the approved permit.

3.2.3 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. The Contractor should assume that all work will require clearing.

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.

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.

Division 4 Specifications

Section 3: Construction Standards

3.2.4 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 and install appropriate erosion control measures.

3.2.5 Existing Utilities

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

3.2.6 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.

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 broken 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.

3.2.7 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.
   1. Provide additional topsoil to achieve required depth.
   2. Contractor should assume that all grading will require the addition of topsoil.

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 ¾-inch in size and larger.

F. Excess soil, rock and debris shall be removed from the project site.

3.2.8 Erosion Control

A. 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.
   1. Contractor shall apply water, without causing soil erosion, to newly planted grassed areas on an as-needed basis until grass growth can be observed across all grassed areas.

3.2.9 Clean-Up

A. Upon completion of each day’s work, broom sweep/pressure wash as necessary any dirt/mud/debris from sidewalk, 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.

3.3 Flow Interruption

A. Flow interruption may be completed using plugging and/or bypass pumping methods. Use upstream manholes for bypass pumping.

B. When flow interruption of any type is to be utilized, the Contractor shall submit a plan for approval. The plan shall 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. The plan shall indicate pump and piping size; pumping capacity shall be capable of handling peak flows. The Contractor shall assume the pipes flow full and can surcharge to ground level during wet weather conditions. The plan shall include an emergency response plan to be followed in the event of a failure of the system.

C. 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 existing flows and services. 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. 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. The rigid piping shall consist of HDPE or steel pipes with suitably pressure rated couplings to withstand twice the maximum system pressure or 50 psi, whichever is greater. Install traffic rated hose/ramp assemblies where discharge crosses paved surfaces and entrances to businesses/residential properties. Under no circumstances will aluminum irrigation type piping or glued PVC pipe be allowed. Pumped sewage shall be in an enclosed hose or pipe that is adequately protected from traffic.

D. 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.

E. The Contractor shall take all necessary steps to eliminate the overflow of sewerage. 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.

F. 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.

G. 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. 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.

3.4 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. Filtered water shall be discharged into the nearest storm water structure or channel.

D. Install appropriate erosion control measures as may be necessary.

E. Sediment collected within the systems shall be disposed of offsite.

Division 4 Specifications

Section 3: Construction Standards

3.5 Excavation

3.5.1 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 wherever 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.

3.5.2 Pit and Trench

A. Excavation shall include those measures necessary to establish trench widths and required grades as indicated on the Construction Drawings.

   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.

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.

3.5.3 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 the excavator being used to install the pipe, manholes and structures for the project that is 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 repairs and/or replacement of damaged property(s) resulting from the work.

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

Division 4 Specifications

Section 3: Construction Standards

G. Excavated rock shall be removed from the project site and disposed of.

3.6 Pipe Work

3.6.1 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/consolidated using any means from beneath the pipe up to one-third (1/3) the pipe diameter prior to placing subsequent backfill. 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.

3.6.2 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.

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.

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 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. A pipe laser and target shall be used for maintaining line and grade. A

calibrated survey transit shall be on site to verify line and grade compliance.

S. 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.

3.6.3 Concrete Thrust Restraint

A. Install concrete thrust restraint at locations where pipe/fitting separation is possible and/or when directed by CCWA.

B. Thrust force shall act against the face of undisturbed soil.

C. Do not place soil backfill on poured concrete until 24 hours after concrete placement.

3.6.4 Pipe Collar

A. Install pipe collars of size and at locations as requested or shown on Construction Details or Construction Drawings.

B. Construct wood forms or select other means to form collars.

C. Place in such manner that subsequent construction activities do not damage collar.

3.6.5 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 the 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. The 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. Hydrostatic Pressure Testing: Pressurized piping installed between new valves or other fittings including all service lines and associated fittings shall be subjected to a hydrostatic pressure test.

1. For water mains and services, piping shall be filled with clean potable water to a pressure of 250 psi (as measured at the lowest point in the piping system) or to a pressure determined by CCWA. The test shall begin after the pressure has stabilized for a period of 15 minutes. Test and pipe shall be considered acceptable when the stabilized pressure is maintained for a period of two (2) hours or other time as determined by CCWA.

2. For sanitary sewer force mains, piping shall be filled with clean potable water to a pressure of 1.5 times the system's operating pressure as determined by CCWA (as measure at the lowest point in the piping system). The test shall begin after the pressure has stabilized for a period of 15 minutes. Test and pipe shall be considered acceptable when the stabilized pressure is maintained for a period of two (2) hours or other time as determined by CCWA.

D. Deformation Testing: Any pipe shall be tested for deformation when requested by CCWA. 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 pipe may be determined by using a standard measuring device throughout the entire length of the pipe segments.

2. The diameter of the pipe may be determined by using a mandrel measuring device being pulled throughout the entire length of the pipe segments.

E. Televising Testing: All pipes 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.

3.6.6 Pipe Disinfection

A. Complete potable water main/piping disinfection procedures as required by CCWA and detailed in the ANSI/AWWA C651 Standard and AWWA "Disinfection of Pipelines and Storage Facilities Field Guide".

B. When required as directed by CCWA, install necessary taps and valves to facilitate disinfection procedures.

1. Operate equipment and inject chlorine at required concentrations and quantity.
2. CCWA shall operate all valves and hydrants during disinfection procedures.
3. The contact period for disinfection will be 24 hours or as determined by CCWA on a case-by-case basis.
4. When disinfection is complete, remove all taps and valves installed for procedure. CCWA will flush piping such that the chlorine residual within the new water main/piping is equal to that of the existing water main system.

C. Upon completion of disinfection procedures and flushing, CCWA will collect samples for laboratory analysis. A minimum of 48 hours is required for analysis to determine acceptable disinfection.

3.7 Cased Bore Work

3.7.1 General

A. Work shall be coordinated and in compliance with the appropriate highway and railroad agencies and their policies.

1. Contractor shall review permits obtained by CCWA.

B. Contractor is responsible for establishing elevations, grades and alignment provided from construction drawings or from other known

utilities.

C. Contractor shall monitor ground movement during construction.

1. Prior to construction, establish ground monitoring points on the pavement surface at 10-foot intervals along the centerline of the alignment and at 10-foot offsets each side of centerline interval using survey methods and produce a scale layout drawing referenced to a benchmark.
2. Collect surface elevation readings immediately prior to construction, once per week during construction, once one week after all construction is completed and once four weeks after all construction is completed from the monitoring points to the nearest one-hundredth of a foot (0.01) and maintain a log of measurements documenting location point, date, time and elevation.
3. Work shall be immediately stopped when readings indicate any surface movement.
4. The Contractor shall propose immediate action to remedy the problem for review and approval by the CCWA.
5. Any surface repair is the Contractor's sole responsibility including cost.
6. Provide a table of all monitoring recorded data.

3.7.2 Bore and Receiving Pit

A. Bore entry and receiving pits shall be completed and sized as required by the Contractor.

B. The base of the bore pit and bore pit walls shall be prepared in such a manner as to support equipment loading anticipated during bore operations.

C. Construction of pits shall comply with Excavation and Backfill, and Compaction specifications referenced herein.

D. Equipment set-up in the bore pit shall be set to the grade that matches the construction drawings or known utilities.

Division 4 Specifications

Section 3: Construction Standards

3.7.3 Installation

A. Boring, jacking and steering of casings through soil and rock shall be completed by dry auger boring without jetting, sluicing or wet boring. Free boring (boring without casing) shall be prohibited.

B. The boring diameter shall be essentially the same as the outside

diameter of the casing.

C. Cutting head for standard soil bore shall be suited for soil and weathered rock mixed conditions. Cutting head may be advanced slightly ahead of jacked casing in a manner that will prevent voids forming in the earth around the perimeter of the casing.

D. Cutting head for rock conditions shall be “v” shaped or similar and be suited for medium rock formations having less than 8,000 psi hardness.

E. Casing lengths shall be as long as practicable and joined by single grooved butt weld for the entire circumference of the casing.

F. Upon completion of bore, casing shall be cleaned free of all dirt and debris using manual methods, high pressure water via appropriate jet cleaning nozzles and vacuum methods.

G. Should a boring encounter refusal or other unforeseen conditions, Contractor shall notify CCWA immediately in writing before advancing the casing.

1. Note that instances may occur where CCWA requests the Contractor to remove augers for further investigation or remove augers and casing for subsequent casing reinsertion with other cutting heads.

H. Borings shall be completed to the required grade and alignment within the following tolerances.

1. Non steered bore: vertically +/- 1% of length of bore, horizontally +/- 1% of length of bore.
2. Steered bore: vertically +/- 0.1% of length of bore, horizontally +/- 1% of length of bore.

I. Where a steered casing is being installed, the Contractor shall record an indication of the grade at the beginning of each piece of casing installed; the record shall be provided to CCWA.

1. CCWA shall be notified immediately in writing when the Contractor has determined the bore is not on the required grade. CCWA shall provide the Contractor with an indication to proceed or to stop work.

3.7.4 Pipe Insertion

A. Pipe shall be inserted by means of pulling or pushing as recommended by the pipe manufacturer.

B. Contractor shall prepare an end assembly to pull from/push against such that ends of pipe are not damaged during insertion.

C. Pipe shall be supported within casing to limit radial movement to a maximum of 3/4 inch.

D. A minimum of three (3) spacers shall be installed on each nominal section of pipe at spacing recommended by the pipe or casing manufacturer.

E. The annulus between the pipe and casing, at each end, shall be sealed using a flexible rubber seal.

3.7.5 Cased Bore Acceptance

A. Casing installed in accordance with these specifications shall be accepted by CCWA.

B. Casing installed not complying with the listed tolerances shall be subject to a CCWA decision as follows.

1. Where CCWA was notified of any tolerance discrepancy and CCWA provided indication to stop the bore, CCWA will not pay any costs associated with the bore and the Contractor shall bulkhead and grout fill the casing at the Contractor’s expense.
2. Where CCWA was notified of any tolerance discrepancy and CCWA provided indication to continue the bore, CCWA shall accept the cased bore and pay costs associated with the bore and the Contractor shall pay for any additional costs, beyond the planned alignment and grade, required to connect piping.
3. Where CCWA has not been notified of any tolerance discrepancy, CCWA may reject the cased bore and not pay any costs associated with the bore and the contractor shall bulkhead and grout fill the

casing at the Contractor's expense.

4. Where CCWA has not been notified of any tolerance discrepancy, CCWA may accept the cased bore and pay costs associated with the bore and the Contractor shall pay for any additional costs, beyond the planned alignment and grade, required to connect piping.

3.8 Manhole Work

3.8.1 New Manhole Installation

A. Install manholes of required sizes and at locations and elevations as shown on Construction Drawings. Manholes shall be set atop stone as indicated on the Construction Drawings.

B. The bed shall be prepared so that the manhole is set level.

C. Manhole sections shall be handled with lifting straps or hooked cables using a minimum of two (2) of the manufactured manhole lifting holes.

D. Manhole 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. Manhole 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. Manhole 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.

J. Upon completion of visual testing activities, install HDPE cap over manhole joint locations.

K. Manholes may not be placed in service until all testing has been

accepted by CCWA.

L. Manholes not set to the requested grade/alignment shall be removed and subsequently set to the requested grade/alignment and the expense of the contractor.

3.8.2 Invert Construction

A. Clean new and existing manhole 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. Apply sealing compound to invert material in accordance with the manufacturer’s instruction.

E. Invert construction shall have sufficient time to cure so as not to be affected by in-service conditions.

3.8.3 Manhole Testing

A. Testing shall be performed by CCWA 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: Water infiltration 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.

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 procedures may be considered.

3.9 Backfill and Compaction

3.9.1 Backfill

A. Excavations shall be backfilled using suitable material in accordance with the 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-iches 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 with adjacent surfaces.

3.9.2 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).

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 98% 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.

3.9.3 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 test 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

3.10 Asphalt and Concrete Placement

3.10.1 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.

3.10.2 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 40º 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.

2. Saw joint depth shall be ¼ 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.

3.10.3 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.

3.11 Demolition

3.11.1 Bulkhead

A. Install bulkheads at locations shown on the Construction Drawings or at requested locations.

B. Plug with grout abandoned services and any pipe at Service Re-Connects as may be required as shown on the Construction Drawings.

C. Cut existing pipe in such manner that provides for installation.

D. Remove and dispose debris and provide suitable work area.

E. Construct bulkhead across entire pipe opening using brick and mortar, minimum eight (8) inches in depth.

3.11.2 Remove

A. Remove pipe, manholes and structures completely from the ground at locations shown on the Construction Drawings or at requested locations.

B. Cut existing pipe, manholes and structures in such manner that provides for removal.

C. Remove debris and dispose off-site in accordance with local/state regulations.

D. Place suitable soil and compact in accordance with backfill and compaction requirements.

3.11.3 Grout Fill

A. Grout fill pipe at locations shown on the Construction Drawings or at requested locations.

B. Drill holes through soil, asphalt or concrete down to and into the existing pipe at such intervals to ensure complete grout fill of pipe.

C. Install steel pipes into drilled holes, extending into pipe to be filled.

D. Pump high flow grout into steel pipe until grout is observed coming from adjacent steel pipe.

E. Due to the results of the initial grouting, additional drill holes may need to be installed between the first injection points to allow for additional grouting to fill the void.

F. Upon completion of grouting, remove steel pipe or cut steel pipe a minimum of six (6) inches below surface grade. Finish at grade with a minimum six (6) depth of concrete.

3.11.4 Gravel Fill

A. Gravel fill manholes at locations shown on the Construction Drawings or at requested locations.

B. Remove manhole cone and sections to a minimum of three (3) feet below finished surface grade.

C. Place No. 57 stone into manhole from invert to top of remaining section.

Division 4 Specifications

Section 3: Construction Standards

D. Place suitable soil and compact soil from top of remaining section to finish surface grade in accordance with backfill and compaction requirements.

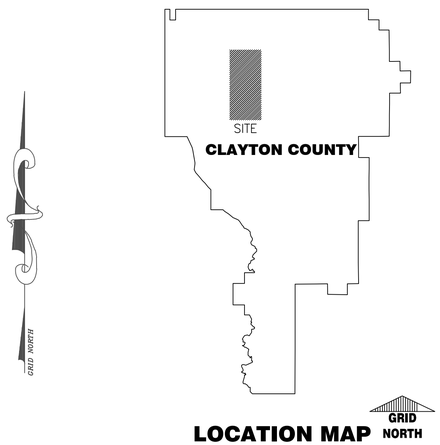
3.12 Acceptance

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 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

Water Pipeline Example Work



LOCATION MAP

Construction Plans
for

GENERAL PIPE WORK
WATER WORK
FOR EXAMPLE

GENERAL NOTES:

1. PROJECT PURPOSE
   TO INSTALL 3400 L. F. OF 16" WATER MAIN, HYDRANTS, ETC
2. OWNER/DEVELOPER
   CLAYTON COUNTY WATER AUTHORITY
   1600 BATTLE CREEK ROAD
   MORROW GEORGIA, 30260
   OFFICE:(770)961-2130
   FAX:(770)960-5229
   Bernard Franks
   Bernardfranks@ccwa.us
3. 24 HOUR CONTACT
   CLAYTON COUNTY WATER AUTHORITY
   WILLIE MOORE (CCWA)
   GSWCC#0000081660
   Office: (770) 305-4959
   CELL (770) 294-2432
4. PROJECT FUNDING
   SOURCE NAME: CLAYTON COUNTY WATER AUTHORITY
5. SITE VISIT
   THE PROPOSED ROUTE AND IMMEDIATE VICINITY WAS VISITED BY THE PLAN DESIGNER ON NOV. 21, 2023 PRIOR TO COMPLETING THE EROSION CONTROL PLAN.
6. TOTAL PROJECT AREA AND DISTURBED AREA
   PROJECT AREA: 136,000 S.F. (3.12 ACRES)
   DISTURBED AREA: 136,000 S.F. (3.12 ACRES)
7. 100-YEAR FLOOD PLAIN
   THIS PROJECT DOES NOT APPEAR TO CROSS IDENTIFIED 100 YEAR FLOOD HAZARD AREAS IN CLAYTON COUNTY THROUGHOUT THE PROJECT.

   CLAYTON COUNTY F.I.R.M. COMMUNITY PANELS:

   CLAYTON CO.: PANEL NUMBER 130063C 0067F DATED JUNE 7, 2017
8. WETLANDS
   THE DELINEATION OF JURISDICTIONAL WATERS FOR THIS PROJECT WAS COMPLETED BY VHB, INC.. BASED ON THE RESULTS OF THE DELINEATION THE PROJECT ROUTE APPEARS TO CROSS JURISDICTIONAL WATERS.

   THE OWNER/DEVELOPER AND ENGINEER HAVE REVIEWED THE APPROPRIATE LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING DEVELOPMENT ACTIVITIES ADJACENT TO FLOODPLAINS, STATE WATERS, AND WETLANDS AND HAVE DETERMINED THAT THIS DEVELOPMENT PLAN SATISFIES THE STANDARDS PRESENTED IN APPLICABLE REGULATIONS.
9. U.S. ARMY CORPS OF ENGINEERS
   A PRE-CONSTRUCTION NOTIFICATION HAS BEEN SUBMITTED TO THE U.S.A.C.O.E.
10. NPDES MONITORING
    STORM WATER RUNOFF ASSOCIATED WITH CONSTRUCTION ACTIVITY SHALL NOT BE PART OF THIS PROJECT.
11. STATE WATERS
    BASED ON VISUAL RECONNAISSANCE ON JANUARY 9, 2023, THE PROJECT ROUTE DOES NOT APPEAR TO CROSS STATE WATERS.
12. STATE PLANE COORDINATE SYSTEM
    THE CONSTRUCTION DRAWINGS WERE PREPARED USING THE FOLLOWING COORDINATE SYSTEMS.
    HORIZONTAL CONTROL: NORTH AMERICAN DATUM 83/94
    VERTICAL CONTROL: NATIONAL GEODETIC VERTICAL DATA 88.
    GRID ZONE: GEORGIA WEST 1002.

DRAWING INDEX			
DRAWING #	TITLE	STATIONS	SHEET #
C-1	COVER		1
P-1	PLAN & PROFILE	0+00-12+00	2
P-2	PLAN & PROFILE	12+00-24+00	3
P-3	PLAN & PROFILE	24+00-31+00	4
P-4	CONSTRUCTION DETAILS		5
E-1	EREOSION DETAILS		6

CONSTRUCTION SCHEDULE															
ITEM	MONTH 1				MONTH 2				MONTH 3				MONTH 4			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INSTALL EROSION CONTROL																
EROSION CONTROL MAINTENANCE																
UTILITY CONSTRUCTION & CLEARING																
REGRASSING																

811
Georgia call Center,Know what's **below.**
Call before you dig.

LEGEND							
S	EXISTING SANITARY SEWER MANHOLE	E/P	EDGE OF PAVEMENT	6G 6G	EXISTING GAS MAIN & SIZE	Ss	slope stabilization
S	PROPOSED SANITARY SEWER MANHOLE	MB	EXISTING MAIL BOX	25 FT SB	25' STREAM BUFFER (STATE)	CE	CONSTRUCTION EXIT
	EXISTING WATER VALVE	WM	EXISTING WATER METER	50 FT SB	50' STREAM BUFFER (COUNTY)	CD(18)	HAY BALE CHECK DAM
	EXISTING FIRE HYDRANT	WMV	EXISTING WATER METER VAULT	STREAM BANK STREAM	STREAM BANK AND FLOW DIRECTION	CD(19)	CHANNEL STABILIZATION WITH RIP-RAP
	EXISTING STREET SIGN	CMP	CORRUGATED METAL PIPE	WETLANDS	WETLAND LIMITS	SS	STREAM BANK STABILIZATION RIP-RAP & LIVE STAKING
	EXISTING LAMP POST	RCP	REINFORCED CONCRETE PIPE	100 YR FLOOD	100 YEAR FLOOD ELEVATION	IN(3)	PIPE INLET SEDIMENT TRAP
	EXISTING UTILITY POLE	DIP	DUCTILE IRON PIPE	X X	EXISTING FENCE	SI	PIPE OUTLET TO FLAT AREA
TB	EXISTING POWER TRANSFORMER	CTV	EXISTING CABLE TV BOX	LLL LLL	LAND LOT LINE	DSB	DISTURBED AREA STABILIZATION W/SOD
P	EXISTING TELEPHONE MANHOLE			OTS OTS	EXISTING OVERHEAD TRAFFIC SIGNAL LINES	SI(2)	DROP INLET SEDIMENT TRAP
JB	EXISTING STORM JUNCTION BOX			UTS UTS	EXISTING UNDERGROUND TRAFFIC SIGNAL LINES		TEMPORARY/PERMANENT VEGETATION COVER
HW	EXISTING STORM HEADWALL			FO FO	EXISTING FIBER OPTIC CABLE	SCC	TEMPORARY STREAM CROSSING (CULVERT CROSSING)
CB	EXISTING STORM CATCH BASIN			UGP UGP	EXISTING UNDERGROUND POWER LINES	SI(1)	CURB INLET SEDIMENT TRAP
DI	EXISTING STORM DROP INLET			OHP OHP	EXISTING OVERHEAD POWER LINES	CW	CONCRETE WASHOUT STRUCTURE
TB	EXISTING TELEPHONE SWITCH BOX			UGT UGT	EXISTING UNDERGROUND TELEPHONE CONDUIT		REVISION CLOUD
TM	TELEPHONE CABLE MARKER			UGTV UGTV	EXISTING UNDERGROUND CABLE TV		
GW	EXISTING GUIDE WIRE			SFM SFM	EXISTING 6 INCH SEWER FORCE MAIN		
IP	IRON PIN/PROPERTY CORNER MARKER			RSS > RSS >	EXISTING SEWER MAIN, SIZE & FLOW DIRECTION		
TSB	EXISTING TRAFFIC SIGNAL BOX			8W 8W	EXISTING WATER MAIN & SIZE		
GM	EXISTING GAS METER			W W	EXISTING WATER MAIN OR SERVICE		
GV	EXISTING GAS VALVE			24D 24D	EXISTING STORM MAIN SIZE & FLOW DIRECTION		
R/W	RIGHT OF WAY				PROPOSED SEWER MAIN		
P/L	PROPERTY LINE				DEMOLITION / REMOVE PIPE AND MANHOLE		
					DEMOLITION / GROUT FILL		
					DEMOLITION / GRAVEL FILL		
				Sd1	SILT FENCE TYPE AS SPECIFIED		
					CONSTRUCTION LIMITS		

PLANS PREPARED BY:

CLAYTON COUNTY Water AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:

TYPICAL
WATER MAIN

LAND LOT 71 DISTRICT 13 CLAYTON COUNTY, GEORGIA

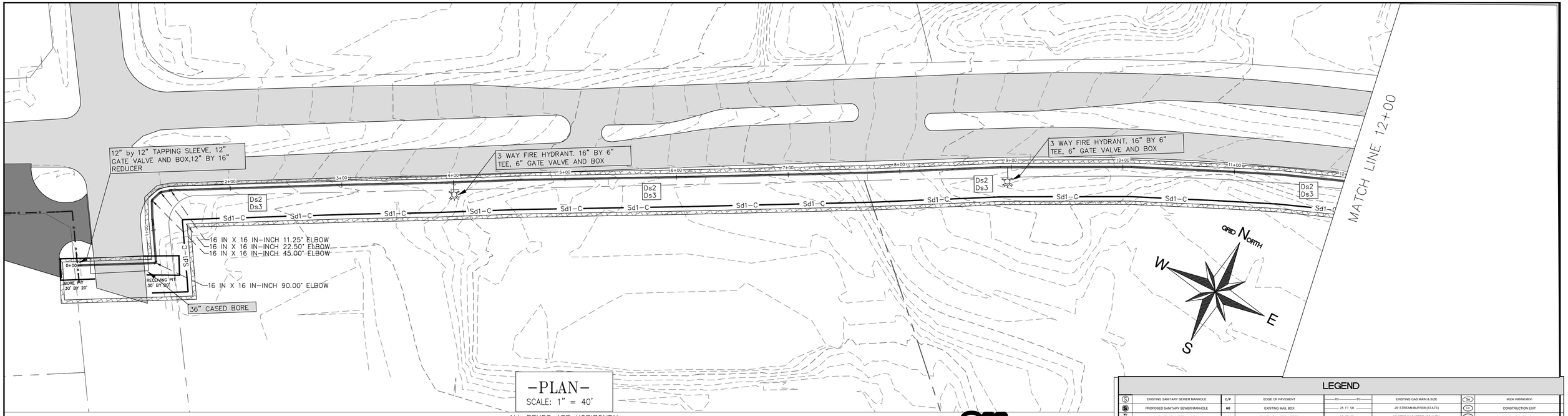
SEAL:

REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: COVER SHEET

DESIGN BY: CCWA	DATE:
DRAWN BY:	JOB #:
	DRAWING #: C-1
CHECKED BY:	SCALE: 1" = N/A'
	SHEET NUMBER 1 OF 6



-PLAN-
SCALE: 1" = 40'

ALL BENDS ARE HORIZONTAL

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

THE GRAPHICAL SCALE IS SHOWN ONLY FOR PERMITTING REQUIREMENTS. THE GRAPHICAL SCALE SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.

NOTES:
1) ALL DRIVEWAYS AND ROADS SHALL BE OPEN-CUT UNLESS NOTED OTHERWISE.
2) CONTRACTOR SHALL REESTABLISH DRAIN DITCHES ALTERED DURING CONSTRUCTION TO AVOID EROSION.
3) ALL BENDS REQUIRE THRUST RESTRAINTS.
4) NEEDS FOR BENDS WILL BE DETERMINED IN THE FIELD DEPENDING ON PIPE DEFLECTION.

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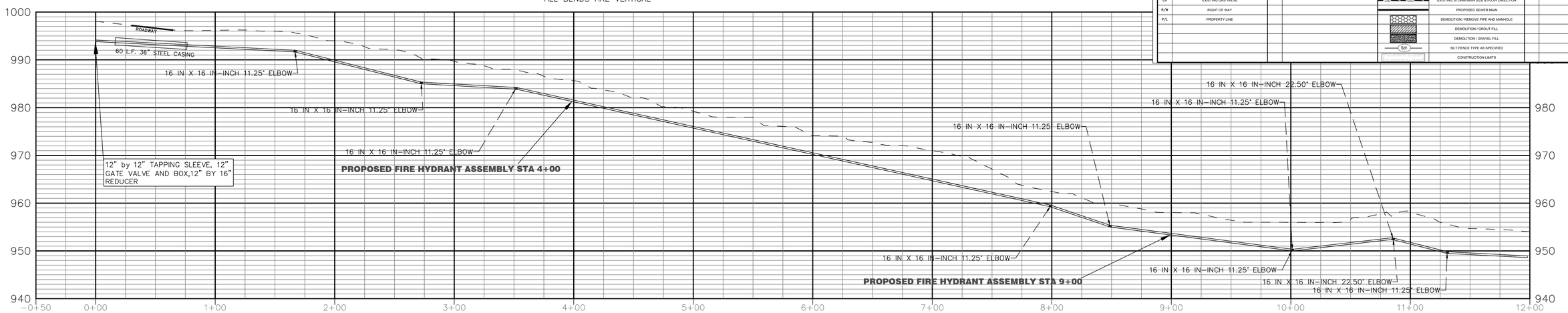
LEGEND

EXISTING SANITARY SEWER MANHOLE	E/P	EDGE OF PAVEMENT	EXISTING GAS MAIN & SIZE	Sk	slope stabilization
PROPOSED SANITARY SEWER MANHOLE	MB	EXISTING MAIL BOX	25' STREAM BUFFER (STATE)	CE	CONSTRUCTION EXIT
EXISTING WATER VALVE	WM	EXISTING WATER METER	50' STREAM BUFFER (COUNTY)	HBC	HAY BALE CHECK DAM
EXISTING FIRE HYDRANT	WMV	EXISTING WATER METER VAULT	STREAM BANK AND FLOW DIRECTION	CS	CHANNEL STABILIZATION WITH RIP-RAP
EXISTING STREET SIGN	CMP	CORRUGATED METAL PIPE	WETLAND LIMITS	SB	STREAM BANK STABILIZATION RIP-RAP & LIVE STAKING
EXISTING LAMP POST	RCP	REINFORCED CONCRETE PIPE	100 YR FLOOD	PS	PIPE INLET SEDIMENT TRAP
EXISTING UTILITY POLE	DIP	DUCTILE IRON PIPE	EXISTING FENCE	PO	PIPE OUTLET TO FLAT AREA
EXISTING POWER TRANSFORMER	CTV	EXISTING CABLE TV BOX	LAND LOT LINE	DAS	DISTURBED AREA STABILIZATION W/SOD
EXISTING TELEPHONE MANHOLE			EXISTING OVERHEAD TRAFFIC SIGNAL LINES	SDI	DROP INLET SEDIMENT TRAP
EXISTING STORM JUNCTION BOX			EXISTING UNDERGROUND TRAFFIC SIGNAL LINES	TP	TEMPORARY/PERMANENT VEGETATION COVER
EXISTING STORM HEADWALL			EXISTING FIBER OPTIC CABLE	SC	TEMPORARY STREAM CROSSING (CULVERT CROSSING)
EXISTING STORM CATCH BASIN			EXISTING UNDERGROUND POWER LINES	CSD	CURB INLET SEDIMENT TRAP
EXISTING STORM DROP INLET			EXISTING OVERHEAD POWER LINES	CW	CONCRETE WASHOUT STRUCTURE
EXISTING TELEPHONE SWITCH BOX			EXISTING UNDERGROUND TELEPHONE CONDUIT		REVISION CLOUD
TELEPHONE CABLE MARKER			EXISTING UNDERGROUND CABLE TV		
EXISTING GUIDE WIRE			EXISTING 6 INCH SEWER FORCE MAIN		
IRON PIN/PROPERTY CORNER MARKER			EXISTING SEWER MAIN, SIZE & FLOW DIRECTION		
EXISTING TRAFFIC SIGNAL BOX			EXISTING WATER MAIN & SIZE		
EXISTING GAS METER			EXISTING WATER MAIN OR SERVICE		
EXISTING GAS VALVE			EXISTING STORM MAIN SIZE & FLOW DIRECTION		
RIGHT OF WAY			PROPOSED SEWER MAIN		
PROPERTY LINE			DEMOLITION / REMOVE PIPE AND MANHOLE		
			DEMOLITION / GROUT FILL		
			DEMOLITION / GRAVEL FILL		
			SILT FENCE TYPE AS SPECIFIED		
			CONSTRUCTION LIMITS		

-PROFILE-
HORZ. 1" = 40'
VERT. 1" = 10'

ALL BENDS ARE VERTICAL



PLANS PREPARED BY:

CLAYTON COUNTY Water AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:

TYPICAL
WATER MAIN

LAND LOT 71 DISTRICT 13 CLAYTON COUNTY, GEORGIA

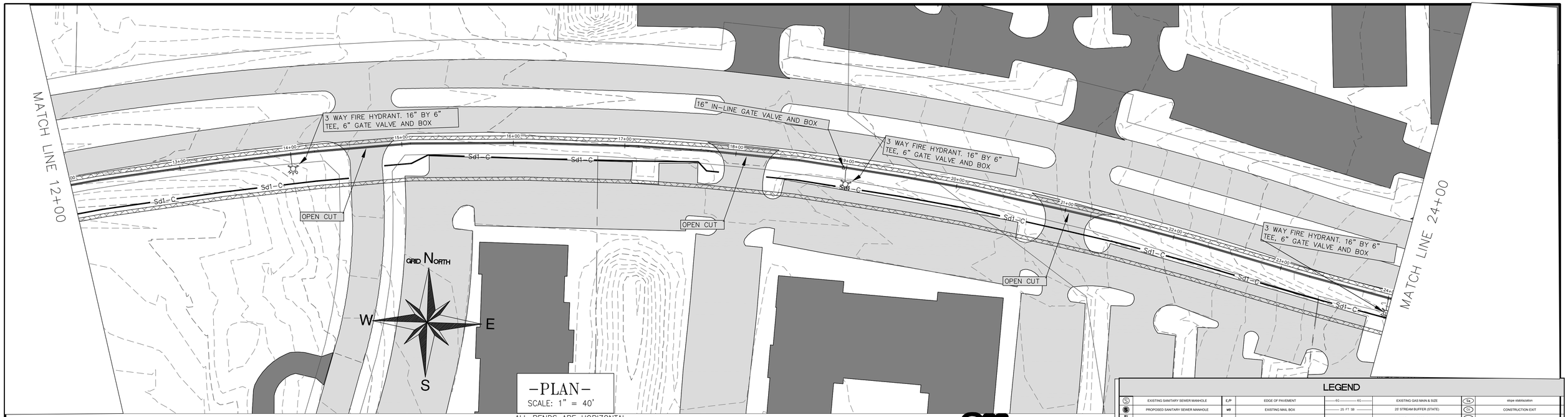
SEAL:

REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: PLAN AND PROFILE

DESIGN BY: CCWA	DATE:
DRAWN BY:	JOB #:
	DRAWING #: P-1
CHECKED BY:	SCALE: 1" = 40'
	SHEET NUMBER 2 OF 6



-PLAN-
SCALE: 1" = 40'

ALL BENDS ARE HORIZONTAL

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
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NOTES:
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4) NEEDS FOR BENDS WILL BE DETERMINED IN THE FIELD DEPENDING ON PIPE DEFLECTION.

LEGEND

S	EXISTING SANITARY SEWER MANHOLE	E/P	EDGE OF PAVEMENT	6G 6G	EXISTING GAS MAIN & SIZE
S	PROPOSED SANITARY SEWER MANHOLE	MB	EXISTING MAIL BOX	25 FT SB	25' STREAM BUFFER (STATE)
WV	EXISTING WATER VALVE	WM	EXISTING WATER METER	50 FT SB	50' STREAM BUFFER (COUNTY)
FH	EXISTING FIRE HYDRANT	WMV	EXISTING WATER METER VAULT	STREAM BANK C	STREAM BANK AND FLOW DIRECTION
SIGN	EXISTING STREET SIGN	CMP	CORRUGATED METAL PIPE	WETLANDS	WETLAND LIMITS
LP	EXISTING LAMP POST	RCP	REINFORCED CONCRETE PIPE	100 YR FLOOD	100 YEAR FLOOD ELEVATION
UP	EXISTING UTILITY POLE	DIP	DUCTILE IRON PIPE	X X	EXISTING FENCE
TR	EXISTING POWER TRANSFORMER	CTV	EXISTING CABLE TV BOX	LLL LLL	LAND LOT LINE
TP	EXISTING TELEPHONE MANHOLE			OTS OTS	EXISTING OVERHEAD TRAFFIC SIGNAL LINES
JB	EXISTING STORM JUNCTION BOX			UTS UTS	EXISTING UNDERGROUND TRAFFIC SIGNAL LINES
HW	EXISTING STORM HEADWALL			FO FO	EXISTING FIBER OPTIC CABLE
CB	EXISTING STORM CATCH BASIN			UGP UGP	EXISTING UNDERGROUND POWER LINES
DI	EXISTING STORM DROP INLET			OHP OHP	EXISTING OVERHEAD POWER LINES
TB	EXISTING TELEPHONE SWITCH BOX			UGT UGT	EXISTING UNDERGROUND TELEPHONE CONDUIT
TM	TELEPHONE CABLE MARKER			UGTV UGTV	EXISTING UNDERGROUND CABLE TV
GW	EXISTING GUIDE WIRE			SFM SFM	EXISTING 6 INCH SEWER FORCE MAIN
IP	IRON PIN/PROPERTY CORNER MARKER			8SS 8SS	EXISTING SEWER MAIN, SIZE & FLOW DIRECTION
TSB	EXISTING TRAFFIC SIGNAL BOX			8W 8W	EXISTING WATER MAIN & SIZE
GM	EXISTING GAS METER			W W	EXISTING WATER MAIN OR SERVICE
GV	EXISTING GAS VALVE			12SD 12SD	EXISTING STORM MAIN SIZE & FLOW DIRECTION
R/W	RIGHT OF WAY				PROPOSED SEWER MAIN
P/L	PROPERTY LINE				DEMOLITION / REMOVE PIPE AND MANHOLE
					DEMOLITION / GROUT FILL
					DEMOLITION / GRAVEL FILL
				Sd1	SILT FENCE TYPE AS SPECIFIED
					CONSTRUCTION LIMITS
				SSA	slope stabilization
CE				CE	CONSTRUCTION EXIT
CDB				CDB	HAY BALE CHECK DAM
CSB				CSB	CHANNEL STABILIZATION WITH RIP-RAP
SB				SB	STREAM BANK STABILIZATION RIP-RAP & LIVE STAKING
SSF				SSF	PIPE INLET SEDIMENT TRAP
SP				SP	PIPE OUTLET TO FLAT AREA
DA				DA	DISTURBED AREA STABILIZATION W/SOD
DIP				DIP	DROP INLET SEDIMENT TRAP
TV				TV	TEMPORARY/PERMANENT VEGETATION COVER
SCC				SCC	TEMPORARY STREAM CROSSING (CULVERT CROSSING)
CIP				CIP	CURB INLET SEDIMENT TRAP
CWO				CWO	CONCRETE WASHOUT STRUCTURE
					REVISION CLOUD

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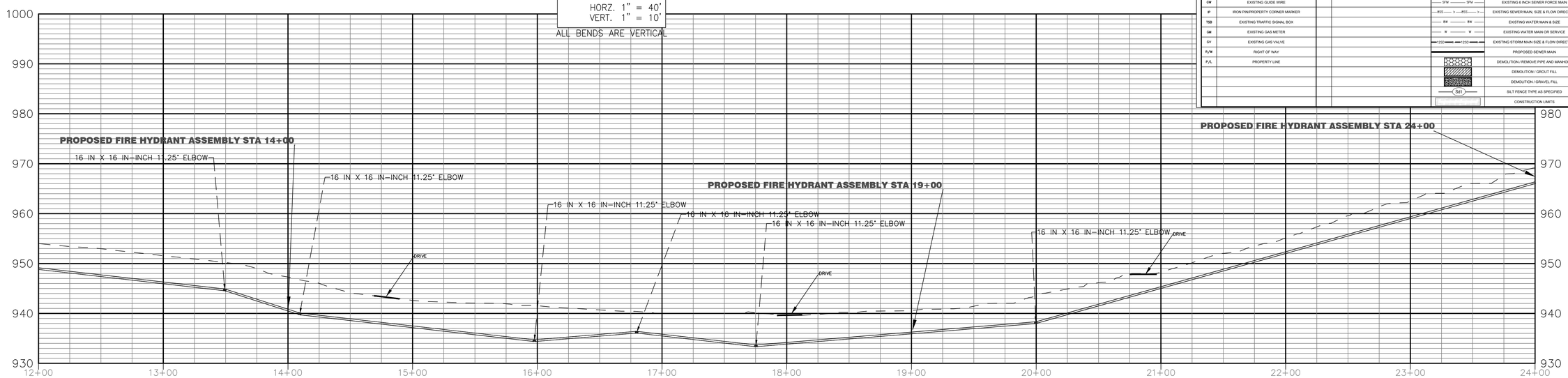

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MORROW, GEORGIA 30260

PROJECT NAME:

TYPICAL
WATER MAIN

LAND LOT 71 DISTRICT 13 CLAYTON COUNTY, GEORGIA

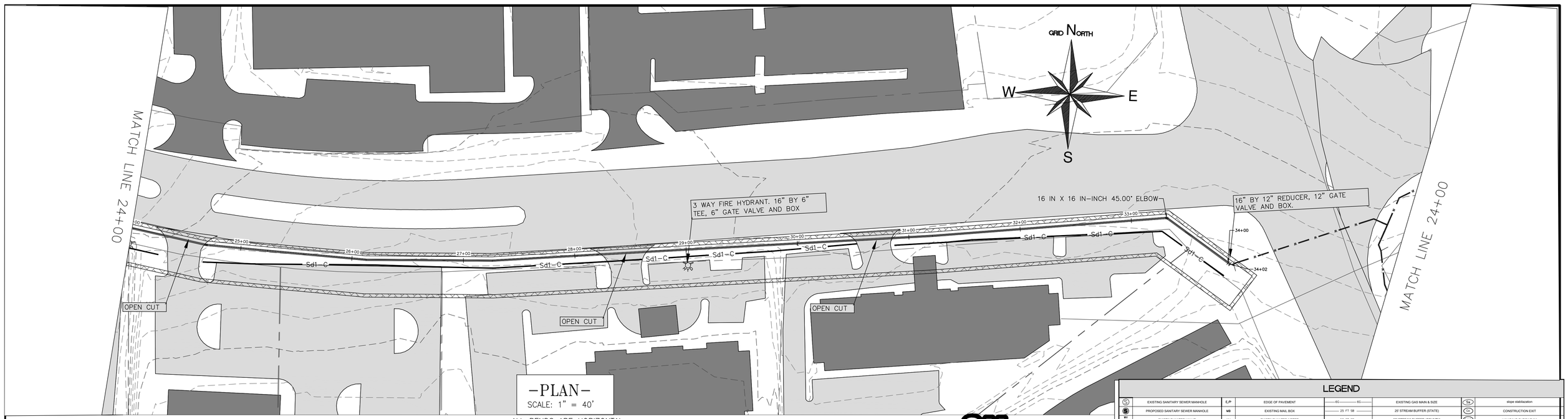
SEAL:

REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: PLAN AND PROFILE

DESIGN BY: CCWA	DATE:
DRAWN BY:	JOB #:
CHECKED BY:	DRAWING #: P-2
	SCALE: 1" = 40'
	SHEET NUMBER 3 OF 6



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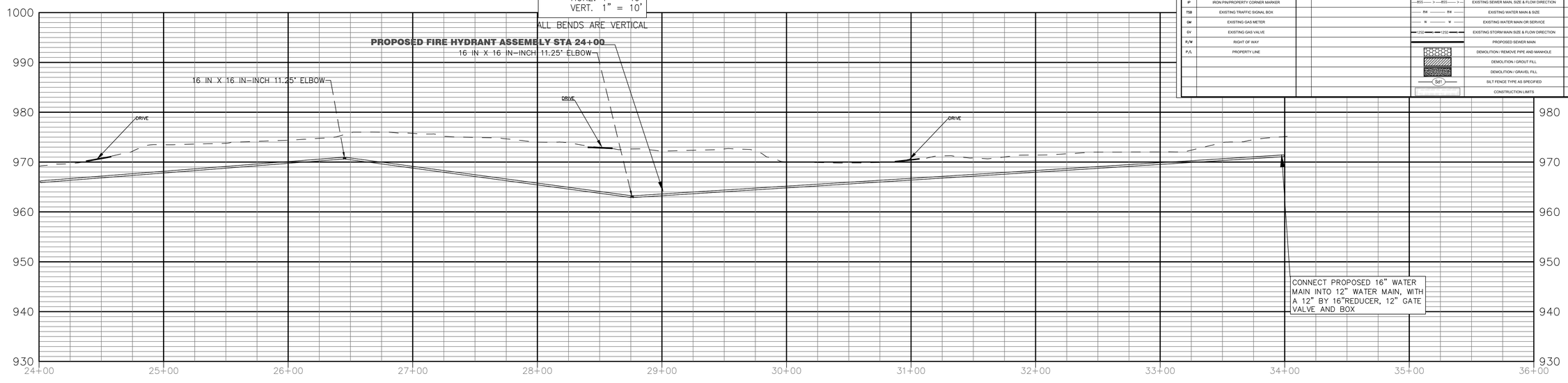

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LAND LOT 71 DISTRICT 13 CLAYTON COUNTY, GEORGIA

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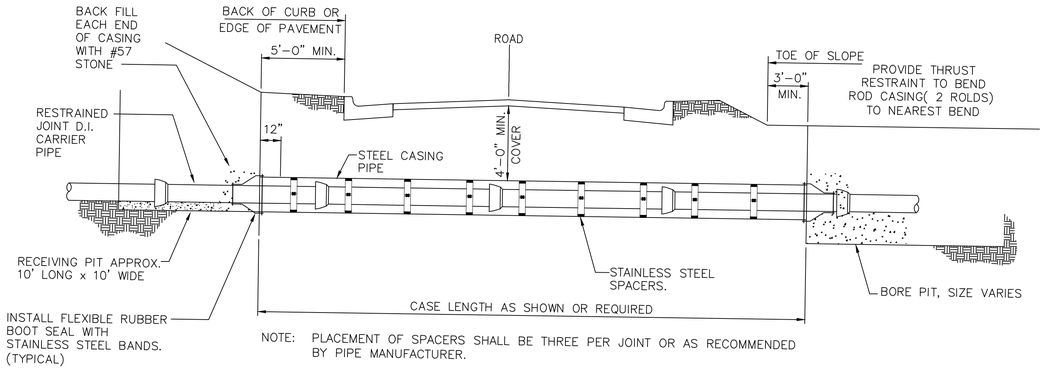
DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: PLAN AND PROFILE

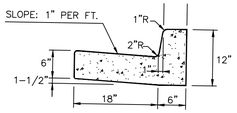
DESIGN BY: CCWA
DRAWN BY:
CHECKED BY:

DATE:
JOB #:
DRAWING #: P-3
SCALE: 1" = 40'
SHEET NUMBER 4 OF 6

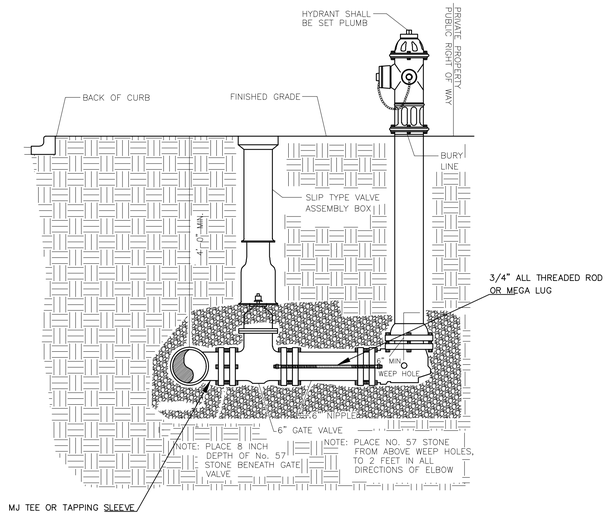


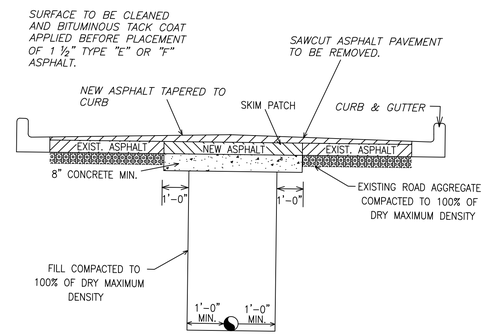
NOTE: PLACEMENT OF SPACERS SHALL BE THREE PER JOINT OR AS RECOMMENDED BY PIPE MANUFACTURER.

TYPICAL JACK AND BORE DETAIL
N.T.S.



TYPICAL CURB AND GUTTER
N.T.S.





NOTE: TAPER NEW ASPHALT PAVEMENT TO EXISTING PAVEMENT.

TYPICAL ASPHALT TO CURB REPLACEMENT
N.T.S.

RAINBIRD MODEL 16 A AUTOMATIC DRAIN VALV.

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LAND LOT 71 DISTRICT 13 CLAYTON COUNTY, GEORGIA

SEAL:

REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: COMNSTRUCTION DETAILS

DESIGN BY: CCWA	DATE:
DRAWN BY:	JOB #:
	DRAWING #: P-5
CHECKED BY:	SCALE: 1" = N/A'
	SHEET NUMBER 5 OF 6

TEMPORARY VEGETATION COVER

1/ Temporary cover crops are very competitive and will crown out perennials if seeded too heavily.
2/ Reduce seeding rates by 50% when drilled.
3/ PLS is an abbreviation for Pure Live Seed.
Chart represents the Southern Piedmont Major Land Resource Area of Georgia.

SPECIES	BROADCAST RATES 2/ – PLS 3/ PER ACRE	BROADCAST RATES 2/ – PLS 3/ PER 1000 SQ FT	PLANTING DATES (THICK LINES INDICATE OPTIMUM DATES, MEDIUM LINES INDICATE PERMISSABLE BUT MARGINAL DATES) J F M A M J J A S O N D
LESPEDEZA, ANNUAL (Lespedeza striata)	40 LB.	0.9 LB.	
ALONE			
IN MIXTURES	10 LBS.	0.2 LB.	
LOVEGRASS, WEEPING (Eragrostis curvula)	4 LBS.	0.1 LB.	
ALONE			
IN MIXTURES	2 LBS.	0.05 LBS.	
MILLET, BROWNTOP (Panicum fasciculatum)	40 LBS.	0.9 LB.	
ALONE			
IN MIXTURES	10 LBS.	0.2 LB.	
MILLET, PEARL (Pennesetum glaucum)			
ALONE	50 LBS.	1.1 LB.	
RYEGRASS, ANNUAL (Lolium tenulentum)			
ALONE	40 LBS.	0.9 LB.	
(Triticum aestivum)	3 BU. (180 LBS.)	4.1 LBS.	
ALONE			
IN MIXTURES	1/2 BU. (30 LBS.)	0.7 LB.	

Ds2

PERMANENT VEGETATION COVER

1/ Reduce seeding rates by 50% when drilled.
2/ PLS is an abbreviation for Pure Live Seed.
Chart represents the Southern Piedmont Major Land Resource Area of Georgia.

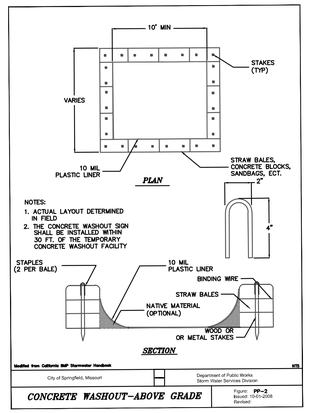
SPECIES	BROADCAST RATES 1/ – PLS 2/ PER ACRE	BROADCAST RATES 1/ – PLS 2/ PER 1000 SQ FT	PLANTING DATES (THICK LINES INDICATE OPTIMUM DATES, MEDIUM LINES INDICATE PERMISSABLE BUT MARGINAL DATES) J F M A M J J A S O N D
BERMUDA, COMMON (Cynodon dactylon)Hulled seed	10 LBS.	0.2 LB.	
ALONE			
WITH OTHER PERENNIALS	6 LBS.	0.1 LB.	
BERMUDA, COMMON (Cynodon dactylon)Unhulled seed	10 LBS.	0.2 LB.	
WITH TEMP. COVER			
WITH OTHER PERENNIALS	6 LBS.	0.1 LB.	
BERMUDA SPRIGS (Cynodon dactylon)Unhulled seed	40 CU. FT.	0.9 CU. FT	
COASTAL, COMMON, OR TIFT 44	SOD PLUGS 3' X 3'	SOD PLUGS 3' X 3'	
CENTIPEDE (Erenochloa ophiuroides)	BLOCK SOD ONLY		
CROWN VETCH (Coronilla varia)			
WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS.	0.3 LB.	
FESCUE, TALL (Festuca arundinacea)	50 LBS.	1.1 LB.	
ALONE			
WITH OTHER PERENNIALS	30 LBS.	0.7 LB.	
LOVEGRASS, WEEPING (Eragrostis curvula)	4 LBS.	0.1 LB.	
ALONE			
WITH OTHER PERENNIALS	2 LBS.	0.05 LB.	

Ds3

FERTILIZER REQUIREMENTS

1/ Apply in spring following seeding.
2/ Apply in split applications when high rates are used.
3/ Apply in 3 split applications.
4/ Apply when plants are pruned.
5/ Apply to grass species only.
6/ Apply when plants grow to a height of 2 to 4 inches.

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. Cool season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/ 2/ - 30
2. Cool season and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ - -
3. Ground covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1300 lbs./ac. 3/ 1300 lbs./ac. 3/ 1100 lbs./ac.	- - -
4. Temporary cover crops seeded alone	First	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
5. Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/ 6/ 50-100 lbs./ac. 2/ 30 lbs./ac.



GRADED RIP-RAP STONE

1. GEORGIA DEPARTMENT OF TRANSPORTATION

D. O. T. NO. 1	SIZE INCHES (SQ. OPENING) MAX.	AVG. 2	MIN.	COMMON USES
TYPE 3	12	9	5	CREEK BANKS PIPE OUTLETS
TYPE 1	24	12	7	LAKES & SHORELINES RIVERS

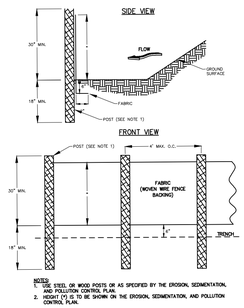
TABLE C-3

GRADED RIP-RAP STONE

1. NATIONAL STONE ASSOCIATION.
2. AT LEAST 50% OF THE INDIVIDUAL STONE PARTICLES MUST BE EQUAL OR LARGER THAN THIS LISTED SIZE.

FLOW VELOCITY (FT./SEC.)	N. S. A. NO. 1	SIZE INCHES (SQ. OPENING) MAX.	AVG. 2	MIN.	FILTER STONE N. S. A. NO. 1
2.5	R-1	1 1/2	3/4	NO. 8	FS-1
4.5	R-2	3	1 1/2	1	FS-1
6.5	R-3	6	3	2	FS-2
9.0	R-4	12	6	2	FS-2
11.5	R-5	18	9	5	FS-2
13.0	R-6	24	12	7	FS-3
14.5	R-7	30	15	12	FS-3

TABLE C-1



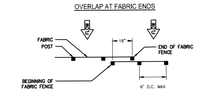
TYPE "S" SILT FENCE

Sd1-C

N.T.S.

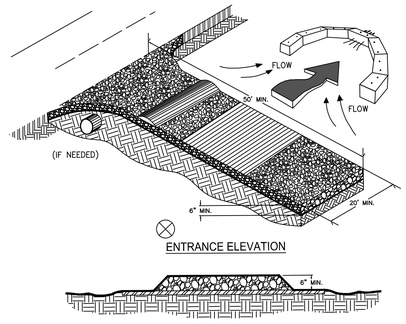
FASTENERS FOR SILT FENCES

OVERLAP AT FABRIC ENDS



NOTES:
1. THE FABRIC AND WIRE SHOULD BE SECURELY FASTENED TO POSTS AND FABRIC ENDS MUST BE OVERLAPPED A MINIMUM OF 18" OR WRAPPED TOGETHER AROUND A POST TO PROVIDE A CONTINUOUS FABRIC BARRIER AROUND THE INLET.

EXIT DIAGRAM



NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

GENERAL NOTES
1. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER WORK IS IN PROGRESS.
2. EROSION AND SEDIMENT CONTROL SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR COMPLIANCE, INSTALLATION, MAINTENANCE AND REMOVAL AS REQUIRED BY THE STATE OF GEORGIA MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA 2016 EDITION AS PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THESE SPECIFICATIONS PRIOR TO ANY CONSTRUCTION ACTIVITIES. THE INSTALLATION OF THE REQUIRED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION.
3. **THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND-DISTURBING ACTIVITIES.**
4. FAILURE TO INSTALL, OPERATE AND/OR MAINTAIN ALL EROSION CONTROL MEASURES SHALL BE JUSTIFICATION TO STOP CONSTRUCTION ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED IN ACCORDANCE WITH THE APPROVED PLANS OR AS DIRECTED BY THE ENGINEER.

SITE PREPARATION
1. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.
2. MATERIAL STAGING AREA SHALL BE ENCOMPASSED WITH REFERENCED SILT FENCE.

DURING CONSTRUCTION
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL CREATED BY DRAINAGE PATTERNS AT VARIOUS STAGES DURING CONSTRUCTION. EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES.
2. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
3. THE LOCATION OF SOME EROSION CONTROL DEVICES MAY BE ALTERED FROM THAT SHOWN ON PLANS AS APPROVED BY THE DESIGN ENGINEER AND CLAYTON COUNTY LAND DEVELOPMENT.
4. CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE PERIODIC DRESSING WITH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE OR SITE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN SHALL BE REMOVED IMMEDIATELY.
5. CONTROL DUST USING WATER OR OTHER METHODS AS REQUIRED TO PREVENT DUST FROM BEING A NUISANCE TO THE PUBLIC AND CONCURRENT WITH ON SITE WORK.
6. DISTURBED SOIL SHALL BE STABILIZED WITH EROSION AND SEDIMENT CONTROL MEASURES EACH DAY AND PRIOR TO ANY RAIN EVENT AS FOLLOWS: (A) DISTURBED SOIL SHALL BE RETURNED TO FINAL GRADE. (B) EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED. (C) GRADED SOIL SHALL BE TREATED WITH LIME AND FERTILIZER. (D) APPLY TEMPORARY AND/OR PERMANENT VEGETATION.
7. STRAW MULCHING SHALL BE USED WITH TEMPORARY AND PERMANENT VEGETATION APPLICATIONS AND SHALL BE FREE OF WEED SEEDS AND SPREAD AT A RATE OF 90 POUNDS PER 1,000 SQUARE FEET.
8. THE CONTRACTOR SHALL INSTALL MATTING AND BLANKETS WITHIN ALL DRAINAGE DITCHES UNLESS NOTED OTHERWISE.
9. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED BY THE CERTIFIED INSPECTOR AT THE END OF EACH DAYS WORK AND AT THE END OF EACH AND EVERY RAIN EVENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ANY FAILED OR INADEQUATELY INSTALLED SEDIMENT CONTROL DEVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES.
10. THE CONTRACTOR SHALL REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER.
11. ALL SILTS AND/OR SEDIMENT REMOVED FROM THE EROSION/SEDIMENT CONTROL DEVICES SHALL BE DISPOSED OF ONSITE IN SUCH A MANNER AS TO PREVENT SAID SILTS AND/OR SEDIMENTS FROM REENTERING THE CONTROL DEVICES AND/OR EXITING THE SITE THROUGH THE STORM DRAINAGE SYSTEMS AND/OR SURFACE DRAINAGE.
12. EROSION CONTROL MEASURES WILL BE MAINTAINED UNTIL ALL DISTURBED SOIL WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.

SITE COMPLETION
FINAL STABILIZATION SHALL BE WITH SAME VEGETATION AS EXISTING. UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES WILL BE CONSIDERED ACCEPTABLE WHEN 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR EQUIVALENT PERMANENT STABILIZATION MEASURES HAVE BEEN USED.
2. THE CONTRACTOR SHALL REMOVE SILT FENCE IN AREAS THAT HAVE UNDERGONE FINAL STABILIZATION AS DETERMINED BY CCWA INSPECTOR. CONTRACTOR SHALL DISPOSE SAID SILT FENCE IN ACCORDANCE WITH LOCAL REGULATIONS.
3. CONTRACTOR SHALL CONTACT LOCAL COUNTY EXTENSION FOR WETLAND SPECIES TO REPLANT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND OR MAINTAINING ALL JOB SITE WORK AREAS THAT ARE BEING STABILIZED OR HAVE UNDERGONE FINAL STABILIZATION UNTIL CCWA HAS ISSUED A LETTER OF FINAL ACCEPTANCE.

COUNTY REQUIRED NOTES

ANY REVISION TO THE PLANS AFTER THE INITIAL SUBMITTAL, OTHER THAN THE RESPONSE TO THE PLAN REVIEW COMMENTS, WILL BE INDICATED ON REVISIONS AND SUBMITTED WITH A WRITTEN EXPLANATION OF THE REVISIONS AND THE REASONS.

ANY VARIATIONS FROM THE PERMITTED PLANS, CHANGES IN DESIGN RESULTING FROM FIELD CONDITIONS, OR SUBSTITUTION OF CONSTRUCTION MATERIALS ARE TO BE REVIEWED AND APPROVED BY THE RESPONSIBLE DESIGN ENGINEER AND CLAYTON COUNTY LAND DEVELOPMENT.

PLANS ARE REVIEWED IN GENERAL. SPECIFIC DETAILS AND CALCULATIONS MAY NOT BE CHECKED. THE ENGINEERS STAMP AND SIGNATURE GUARANTEES THE ACCURACY OF THE CALCULATIONS AND DESIGN. PLAN APPROVAL DOES NOT OBLIGATE THE COUNTY TO ACCEPT THE WORK, NOR DOES IT RELIEVE THE DEVELOPER AND / OR ENGINEER FROM COMPLIANCE WITH ANY OTHER COUNTY, STATE OR FEDERAL ORDINANCES AND LAWS. PLAN APPROVAL DOES NOT RELIEVE THE DEVELOPER FROM THE RESPONSIBILITY FOR DAMAGES TO ADJACENT OR DOWNSTREAM PROPERTY RESULTING FROM THIS DEVELOPMENT.

WETLANDS SHOWN ON THIS PLAN ARE UNDER THE JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS. LOT OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WETLAND AREAS WITHOUT PROPER AUTHORIZATION.

AREAS USED AS BURIAL PITS DURING DEVELOPMENT MUST BE LOCATED OUTSIDE THE RIGHT-OF-WAY AND ARE TO BE LOCATED AND IDENTIFIED ON THE FINAL PLAT. GEORGIA DNR EPD REQUIREMENTS ARE TO BE MET. "NO PORTION OF WASTE DISPOSAL SHALL BE LOCATED WITHIN 100 LINEAR FEET OF ANY PROPERTY LINE OR ENCLOSED STRUCTURE".

PLANS PREPARED BY:

CLAYTON COUNTY Water AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:

TYPICAL
WATER MAIN

LAND LOT 71 DISTRICT 13 CLAYTON COUNTY, GEORGIA

SEAL:

REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: EROSION DETAILS

DESIGN BY: CCWA
DRAWN BY:
CHECKED BY:

DATE:
JOB #:
DRAWING #: E-1
SCALE: 1" = N/A'
SHEET NUMBER 6 OF 6

Contractors Name
General Pipe Work
Contractors Address
Contractors Address
Contractors Phone Number
Contractors Fax Number
Contractors Email Address

Invoice # _____ Invoice Date: _____

Clayton County Water Authority

Project Work Order/Invoice
GENPIPE

Project Number:		Contractor:	
Project Name:	Example Water Work	Acceptance By/Date:	
Purchase Order Number:		Days to Complete:	
Street Name/Address:		Start Date:	
CCWA Authorization:		**Estimated Total:**	**$0.00**
Authorization Date:		**Installed Total:**	**$0.00**

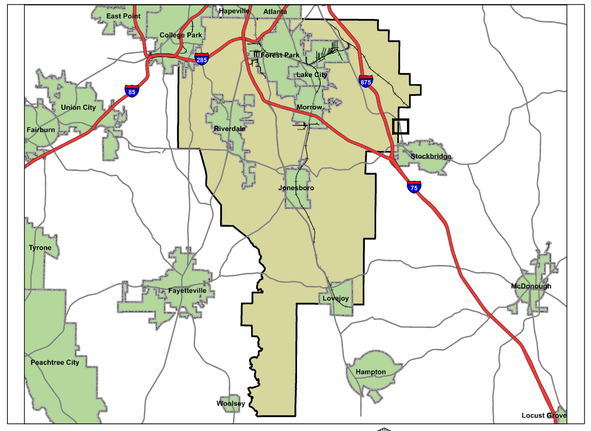
The Project Work Order summarizes work items and quantities to complete. Work items and quantities may be adjusted as necessary with prior CCWA approval.

No.	Itm Master #	Work Item	Description 2	Unit	Unit Price	Estimated Quantity	Estimated Cost	Installed Quantity	Installed Cost
1	C-MOB-00009	Mobilization	Lowboy Service	EA		1.0	$ -		$ -
3	C-BND-00003	Performance and Payment Bonds	For Project Work Orders of $100,000 to $125,000	EA		1.0	$ -		$ -
4	C-BND-00004		For Each Additional $25,000 Increase	EA		7.0	$ -		$ -
6	C-ESC-00002	Sediment Barrier Installation	Silt Fence - Type A	LF		3,200.0	$ -		$ -
9	C-ESC-00009	Sediment Barrier Removal		LF		3,200.0	$ -		$ -
12	C-ESC-00012	Soil Stabilization	Seed and Straw Mulch	SF		36,500.0	$ -		$ -
14	C-ESC-00014		Sod	SF		10,000.0	$ -		$ -
23	C-SW-00003	General Excavation	Up to 6 feet deep	CF		7,680.0	$ -		$ -
30	C-SW-00011	General Fill / Backfill	Crushed Stone / Graded Aggregate Base	CF		7,680.0	$ -		$ -
35	C-SW-00018	Stone Placement Crushed Stone / Graded Aggregate Base	2 inch thick increment	SF		2,880.0	$ -		$ -
46	C-SWAP-00004	Pavement – Remove Asphalt	Greater than 4 inch to 8 inch thick layer	SF		2,880.0	$ -		$ -
50	C-SW-00043	Pavement – Remove Concrete Flat Work	Greater than 4 inch to 8 inch thick layer	SF		2,160.0	$ -		$ -
53	C-SW-00056		Curb and Gutter	LF		300.0	$ -		$ -
60	C-CIP-00001	Pavement – Concrete Flatwork	Up to 4 inch thick layer	SF		2,160.0	$ -		$ -
66	C-CIP-00011	Pavement – Curb and Gutter Replacement	Up to 24 inch width, square back	LF		300.0	$ -		$ -
163	C-PRR-00051	Pipe Installation - Open Cut DI greater than 8-inch to 16-inch	Point Repair, up to 6 feet deep	EA		1.0	$ -		$ -
167	C-PRR-00055		Additional Footage, up to 6 feet deep	LF		3,380.0	$ -		$ -
434	C-LW-00041	Cased Bore 36"	Non Steered	LF		60.0	$ -		$ -
446	C-LW-00056	Bore Entry Pit	Up to 6 feet deep	VF		5.0	$ -		$ -
450	C-LW-00063	Bore Receiving Pit	Up to 6 feet deep	VF		5.0	$ -		$ -
458	C-LW-00077	Pipe Insertion into Steel Casing	DI greater than 8-inch to 16-inch	LF		60.0	$ -		$ -
461	?-??-?????	Directional Drill Mobilization		EA		1.0	$ -		
462	?-??-?????	Directional Drill Boring		LF		205.0	$ -		
471	C-LW-00099	Core Into Pipe	12-inch core into pipe	EA		1.0	$ -		$ -
480	C-LW-00108	Connect Fitting / Valve to Pipe	DI Fitting / Valve up to 8-inch	EA		6.0	$ -		$ -
481	C-LW-00109		DI Fitting / Valve Greater than 8-inch to 16-inch	EA		20.0	$ -		$ -
485	C-LW-00113	Fire Hydrant Installation	Up to 5-foot Bury Depth	EA		6.0	$ -		$ -
569	C-TST-00003	Pressure Testing	Hydrostatic	EA		2.0	$ -		$ -
572	C-TST-00007	Pipe Disinfection		GAL		68.0	$ -		$ -
573	C-HRLY-00001	Hourly Labor	Superintendent	HR		16.0	$ -		$ -
574	C-HRLY-00002		Foreman	HR		16.0	$ -		$ -
575	C-HRLY-00003		Operator	HR		16.0	$ -		$ -
576	C-HRLY-00004		Pipe Layer	HR		16.0	$ -		$ -
577	C-HRLY-00005		Laborer	HR		16.0	$ -		$ -

No.	Itm Master #	Work Item	Description 2	Unit	Unit Price	Estimated Quantity	Estimated Cost	Installed Quantity	Installed Cost
578	C-HRLY-00006		Dump Truck Driver	HR		16.0	$ -		$ -
579	C-HRLY-00007	Hourly Equipment	78,000 # Class Excavator	HR		16.0	$ -		$ -
590	C-HRLY-00018		Hydro Excavator	HR		40.0	$ -		$ -
591	C-HRLY-00021		Utility Truck Fully Equipped with Hand Tools, Air Tools, Cutting Tools, Mudhog Pump, Generator, Air Compressor, Mechanical Tamp	HR		16.0	$ -		$ -

Please Pay This Amount: **$0.00**

Sewer Pipeline Example Work



LOCATION MAP GRID NORTH

CONSTRUCTION PLANS FOR GENERAL PIPE WORK SEWER WORK FOR EXAMPLE

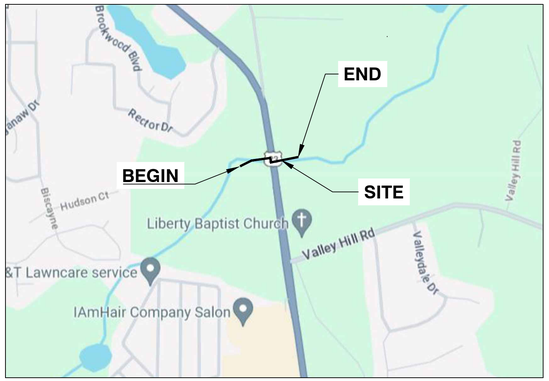
GENERAL NOTES:

1. PROJECT PURPOSE
   CCWA NEEDS TO RELOCATE THE EXISTING SEWER LINE DUE TO GDOT'S ROAD EXPANSION PROJECT.
2. OWNER/DEVELOPER
   CLAYTON COUNTY WATER AUTHORITY 1600
   BATTLE CREEK ROAD
   MORROW GEORGIA, 30260
   BERNARD FRANKS (BERNARD.FRANKS@CCWA.US)
   OFFICE: (770)961-2130
   FAX: (770)960-5229
3. 24 HOUR CONTACT
   CLAYTON COUNTY WATER AUTHORITY
   TOMMY STEPHENS GSWCC#0000075835
   OFFICE: (770)302-3431
   MOBILE: (678)544-1234
4. PROJECT ADDRESS/LOCATION
   THE REPLACEMENT OF 684 LN FT OF SEWER WILL COMMENCE JUST NORTH OF THE INTERSECTION OF VALLEY HILL ROAD AND STATE ROUTE 42 ON STATE ROUTE 42.
5. PROJECT FUNDING
   SOURCE NAME: CLAYTON COUNTY WATER AUTHORITY
6. SITE VISIT
   THE PROPOSED ROUTE AND IMMEDIATE VICINITY WAS VISITED BY THE PLAN DESIGNER ON JANUARY 19, 2024 PRIOR TO COMPLETING THE EROSION CONTROL PLAN.
7. TOTAL PROJECT AREA AND DISTURBED AREA
   HENRY COUNTY: 48,933 S.F. (1.12 ACRES)
8. 100-YEAR FLOOD PLAIN
   THIS PROJECT APPEARS TO CROSS IDENTIFIED 100 YEAR FLOOD HAZARD AREAS IN HENRY COUNTY AS PER THE FOLLOWING LOCATIONS:

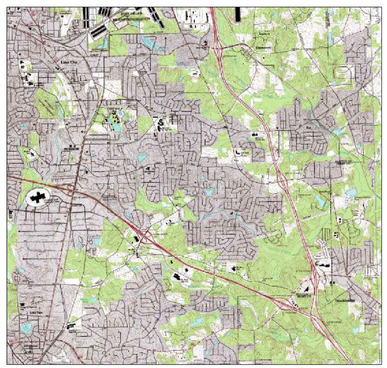
   1) STATION 0+00 – 6+84

   HENRY COUNTY F.I.R.M. COMMUNITY PANELS:

   HENRY CO.: PANEL NUMBER 13151C 0060D DATED NOVEMBER 6, 2016
9. WETLANDS
   BASED ON VISUAL RECONNAISSANCE ON MARCH 8, 2024 WETLANDS DO NOT APPEAR TO EXIST ALONG PROJECT ROUTE.
10. STATE WATERS
    BASED ON VISUAL RECONNAISSANCE ON JANUARY 19, 2024, THE PROJECT ROUTE DOES NOT APPEAR TO CROSS ANY STATE WATER.
11. STATE PLANE COORDINATE SYSTEM
    THE CONSTRUCTION DRAWINGS WERE PREPARED USING THE FOLLOWING COORDINATE SYSTEMS.
    HORIZONTAL CONTROL: NORTH AMERICAN DATUM 83/94
    VERTICAL CONTROL: NATIONAL GEODETIC VERTICAL DATA 88.
    GRID ZONE: GEORGIA WEST 1002.



VICINITY MAP GRID NORTH



USGS TOPOGRAPHIC MAP: JONESBORO, GA.
MAP DATE: 1993
SCALE: 1:2000 GRID NORTH

CONSTRUCTION SCHEDULE

ITEM	Month 1				Month 2				Month 3				Month 4			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INSTALL EROSION CONTROL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
EROSION CONTROL MAINTENANCE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
UTILITY CONSTRUCTION & CLEARING		–	–	–	–	–	–	–	–	–	–	–	–	–	–	
REGRASSING		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

DRAWING INDEX

DRAWING #	TITLE	STATIONS	SHEET #
C-1	COVER		1
S-1	SITE PLAN		2
P-1	PLAN & PROFILE	0+00 – 6+84	3
P-2	PIPE CONSTRUCTION DETAILS		4
ES-1	ES & DEMO PLAN	0+00 – 6+84	5
ES-2	ES & PC DETAILS		6
ES-3	ES & PC NPDES AND CONSTRUCTION NOTES		7

Know what's **below.** **Call** before you dig.

LEGEND

EXISTING SANITARY SEWER MANHOLE	E/P	EDGE OF PAVEMENT	6G 6G	EXISTING GAS MAIN & SIZE	SLOPE STABILIZATION
PROPOSED SANITARY SEWER MANHOLE	MB	EXISTING MAIL BOX	25 FT SB	25' STREAM BUFFER (STATE)	CONSTRUCTION EXIT
EXISTING WATER VALVE	WM	EXISTING WATER METER	50 FT SB	50' STREAM BUFFER (COUNTY)	HAY BALE CHECK DAM
EXISTING FIRE HYDRANT	WMV	EXISTING WATER METER VAULT	STREAM BANK	STREAM BANK AND FLOW DIRECTION	CHANNEL STABILIZATION WITH RIP-RAP
EXISTING STREET SIGN	CMP	CORRUGATED METAL PIPE	WETLANDS	WETLAND LIMITS	STREAM BANK STABILIZATION RIP-RAP & LIVE STAKING
EXISTING LAMP POST	RCP	REINFORCED CONCRETE PIPE	100 YR FLOOD	100 YEAR FLOOD ELEVATION	PIPE INLET SEDIMENT TRAP
EXISTING UTILITY POLE	DIP	DUCTILE IRON PIPE	X X	EXISTING FENCE	PIPE OUTLET TO FLAT AREA
EXISTING POWER TRANSFORMER	CTV	EXISTING CABLE TV BOX	LLL LLL	LAND LOT LINE	DISTURBED AREA STABILIZATION W/SOD
EXISTING TELEPHONE MANHOLE	JB	EXISTING STORM JUNCTION BOX	OTS OTS	EXISTING OVERHEAD TRAFFIC SIGNAL LINES	DROP INLET SEDIMENT TRAP
EXISTING BUILDING	HW	EXISTING STORM HEADWALL	UTS UTS	EXISTING UNDERGROUND TRAFFIC SIGNAL LINES	TEMPORARY/PERMANENT VEGETATION COVER
	CB	EXISTING STORM CATCH BASIN	FO FO	EXISTING FIBER OPTIC CABLE	TEMPORARY STREAM CROSSING (CULVERT CROSSING)
	DI	EXISTING STORM DROP INLET	UGP UGP	EXISTING UNDERGROUND POWER LINES	CURB INLET SEDIMENT TRAP
	TB	EXISTING TELEPHONE SWITCH BOX	OHP OHP	EXISTING OVERHEAD POWER LINES	CONCRETE WASHOUT STRUCTURE
	TM	TELEPHONE CABLE MARKER	UGT UGT	EXISTING UNDERGROUND TELEPHONE CONDUIT	REVISION CLOUD
	GW	EXISTING GUIDE WIRE	UGTV UGTV	EXISTING UNDERGROUND CABLE TV	
	IP	IRON PIN/PROPERTY CORNER MARKER	SFM SFM	EXISTING 8 INCH SEWER FORCE MAIN	
	TSB	EXISTING TRAFFIC SIGNAL BOX	8SS 8SS	EXISTING SEWER MAIN, SIZE & FLOW DIRECTION	
	GM	EXISTING GAS METER	8W 8W	EXISTING WATER MAIN & SIZE	
	GV	EXISTING GAS VALVE	W W	EXISTING WATER MAIN OR SERVICE	
	R/W	RIGHT OF WAY	24SD 24SD	EXISTING STORM MAIN SIZE & FLOW DIRECTION	
	P/L	PROPERTY LINE		PROPOSED SEWER MAIN	
				DEMOLITION / REMOVE PIPE AND MANHOLE	
				DEMOLITION / GROUT FILL	
				DEMOLITION / GRAVEL FILL	
			SF1	SILT FENCE TYPE AS SPECIFIED	
				CONSTRUCTION LIMITS	

PLANS PREPARED BY:

CLAYTON COUNTY Water AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:
GENERAL PIPE WORK
SEWER WORK
FOR EXAMPLE

LAND LOT 103 DISTRICT 12
HENRY COUNTY, GEORGIA

SEAL:

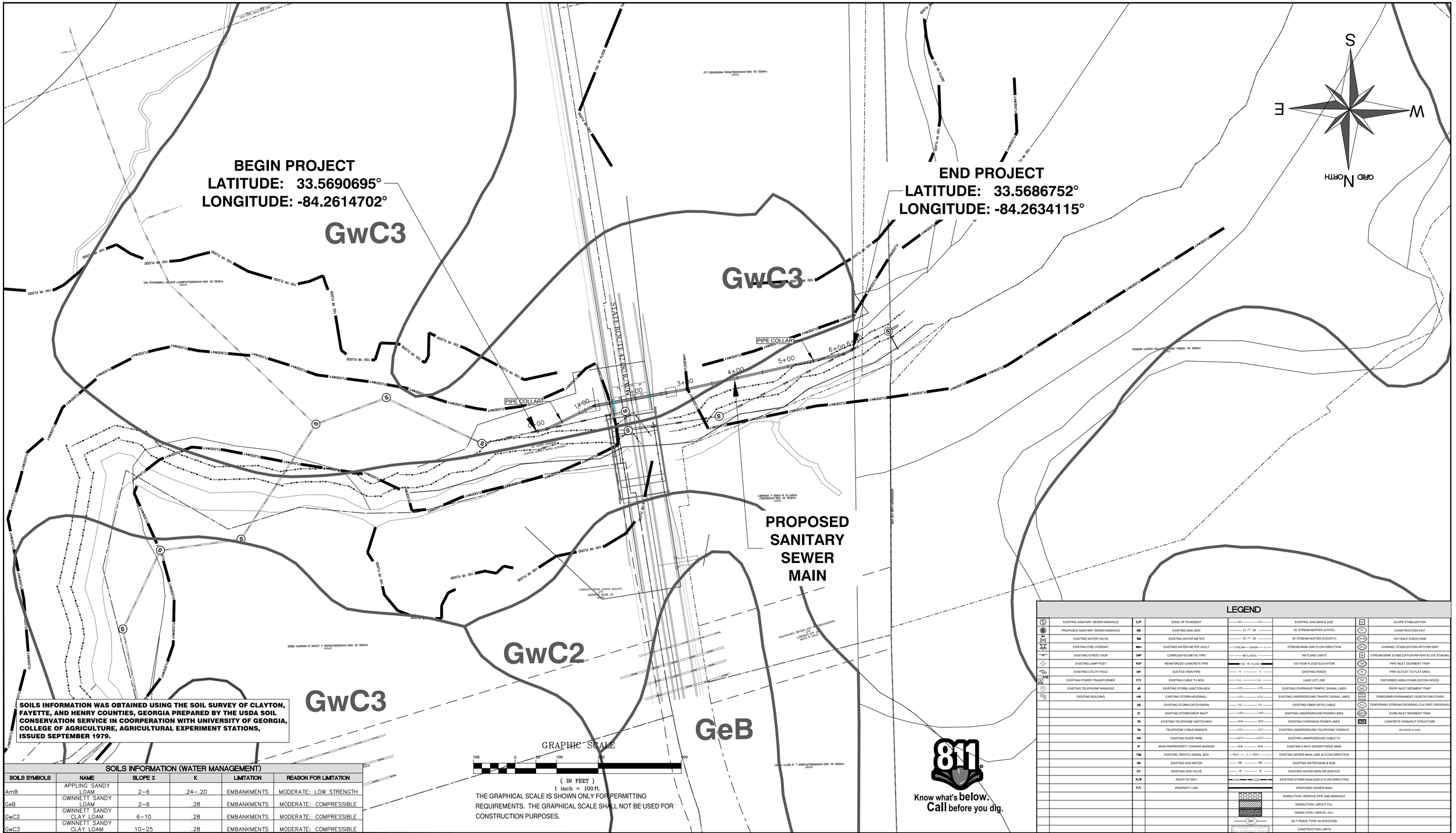
REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: COVER

DESIGN BY: CCWA	DATE: 2/4/2024
DRAWN BY: MAS	JOB #:
CHECKED BY:	DRAWING #: C-1
	SCALE: N.T.S.

SHEET NUMBER 1 OF 7



SOILS INFORMATION WAS OBTAINED USING THE SOIL SURVEY OF CLAYTON, FAYETTE, AND HENRY COUNTIES, GEORGIA PREPARED BY THE USDA SOIL CONSERVATION SERVICE IN COORPERATION WITH UNIVERSITY OF GEORGIA, COLLEGE OF AGRICULTURE, AGRICULTURAL EXPERIMENT STATIONS, ISSUED SEPTEMBER 1979.

SOILS INFORMATION (WATER MANAGEMENT)

SOILS SYMBOLS	NAME	SLOPE %	K	LIMITATION	REASON FOR LIMITATION
AmB	APPLING SANDY LOAM	2–6	.24–.20	EMBANKMENTS	MODERATE: LOW STRENGTH
GeB	GWINNETT SANDY LOAM	2–6	.28	EMBANKMENTS	MODERATE: COMPRESSIBLE
GwC2	GWINNETT SANDY CLAY LOAM	6–10	.28	EMBANKMENTS	MODERATE: COMPRESSIBLE
GwC3	GWINNETT SANDY CLAY LOAM	10–25	.28	EMBANKMENTS	MODERATE: COMPRESSIBLE

LEGEND

S	EXISTING SANITARY SEWER MANHOLE	E/P	EDGE OF PAVEMENT	6G 6G	EXISTING GAS MAIN & SIZE
S	PROPOSED SANITARY SEWER MANHOLE	MB	EXISTING MAIL BOX	25 FT SB	25' STREAM BUFFER (STATE)
W	EXISTING WATER VALVE	WM	EXISTING WATER METER	50 FT SB	50' STREAM BUFFER (COUNTY)
W	EXISTING FIRE HYDRANT	WMV	EXISTING WATER METER VAULT	STREAM BANK	STREAM BANK AND FLOW DIRECTION
	EXISTING STREET SIGN	CMP	CORRUGATED METAL PIPE	WETLANDS	WETLAND LIMITS
	EXISTING LAMP POST	RCP	REINFORCED CONCRETE PIPE	100 YR FLOOD	100 YEAR FLOOD ELEVATION
	EXISTING UTILITY POLE	DIP	DUCTILE IRON PIPE	X X	EXISTING FENCE
PIB	EXISTING POWER TRANSFORMER	CTV	EXISTING CABLE TV BOX	LLL LLL	LAND LOT LINE
	EXISTING TELEPHONE MANHOLE	JB	EXISTING STORM JUNCTION BOX	OTS OTS	EXISTING OVERHEAD TRAFFIC SIGNAL LINES
	EXISTING BUILDING	HW	EXISTING STORM HEADWALL	UTS UTS	EXISTING UNDERGROUND TRAFFIC SIGNAL LINES
		CB	EXISTING STORM CATCH BASIN	FO FO	EXISTING FIBER OPTIC CABLE
		DI	EXISTING STORM DROP INLET	UGP UGP	EXISTING UNDERGROUND POWER LINES
		TB	EXISTING TELEPHONE SWITCH BOX	OHP OHP	EXISTING OVERHEAD POWER LINES
		TM	TELEPHONE CABLE MARKER	UGT UGT	EXISTING UNDERGROUND TELEPHONE CONDUIT
		GW	EXISTING GUIDE WIRE	UGTV UGTV	EXISTING UNDERGROUND CABLE TV
		IP	IRON PIN/PROPERTY CORNER MARKER	SFM SFM	EXISTING 6 INCH SEWER FORCE MAIN
		TSB	EXISTING TRAFFIC SIGNAL BOX	8SS 8SS	EXISTING SEWER MAIN, SIZE & FLOW DIRECTION
		GM	EXISTING GAS METER	8W 8W	EXISTING WATER MAIN & SIZE
		GV	EXISTING GAS VALVE	W W	EXISTING WATER MAIN OR SERVICE
		R/W	RIGHT OF WAY	24D 24D	EXISTING STORM MAIN SIZE & FLOW DIRECTION
		P/L	PROPERTY LINE		PROPOSED SEWER MAIN
					DEMOLITION / REMOVE PIPE AND MANHOLE
					DEMOLITION / GROUT FILL
					DEMOLITION / GRAVEL FILL
				S01	SILT FENCE TYPE AS SPECIFIED
					CONSTRUCTION LIMITS

SLOPE STABILIZATION			
CE	CONSTRUCTION EXIT		
HBCD	HAY BALE CHECK DAM		
CSR	CHANNEL STABILIZATION WITH RIP-RAP		
SBSR	STREAM BANK STABILIZATION RIP-RAP & LIVE STAKING		
SIT	PIPE INLET SEDIMENT TRAP		
PO	PIPE OUTLET TO FLAT AREA		
DSM	DISTURBED AREA STABILIZATION W/SOD		
DIST	DROP INLET SEDIMENT TRAP		
	TEMPORARY/PERMANENT VEGETATION COVER		
TSC	TEMPORARY STREAM CROSSING (CULVERT CROSSING)		
CIST	CURB INLET SEDIMENT TRAP		
CWS	CONCRETE WASHOUT STRUCTURE		
	REVISION CLOUD		

PLANS PREPARED BY:

CLAYTON COUNTY Water AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:

GENERAL PIPE WORK
SEWER WORK
FOR EXAMPLE

LAND LOT 103 DISTRICT 12
HENRY COUNTY, GEORGIA

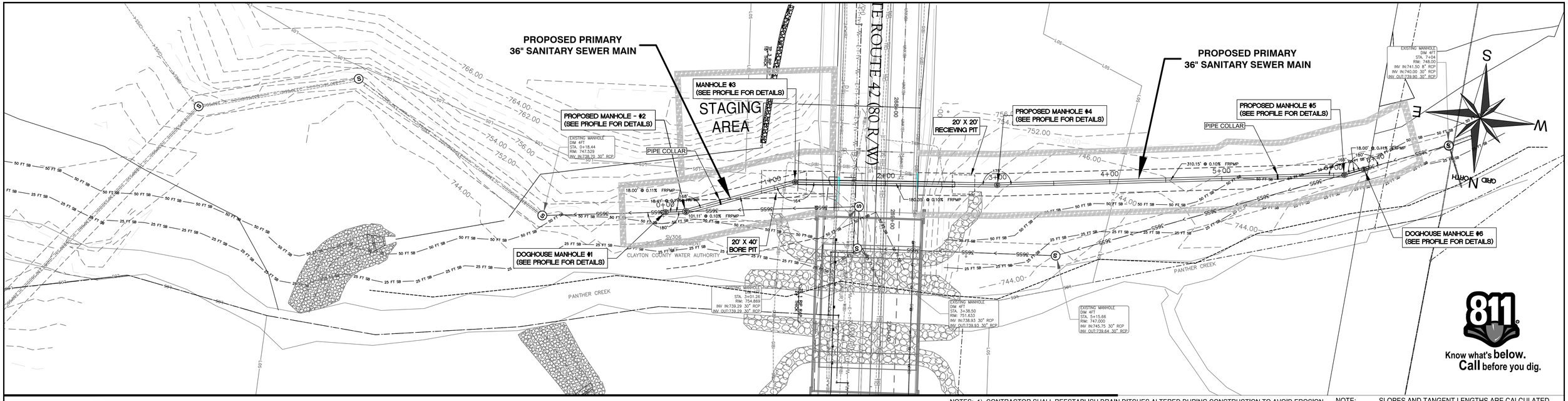
SEAL:

REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: SITE PLAN

DESIGN BY: CCWA	DATE: 2/4/2024
DRAWN BY: MAS	JOB #:
CHECKED BY:	DRAWING #: S-1
	SCALE: 1" = 80'
	SHEET NUMBER 2 OF 7



THE GRAPHICAL SCALE IS SHOWN ONLY FOR PERMITTING REQUIREMENTS. THE GRAPHICAL SCALE SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NOTES: 1) CONTRACTOR SHALL REESTABLISH DRAIN DITCHES ALTERED DURING CONSTRUCTION TO AVOID EROSION.

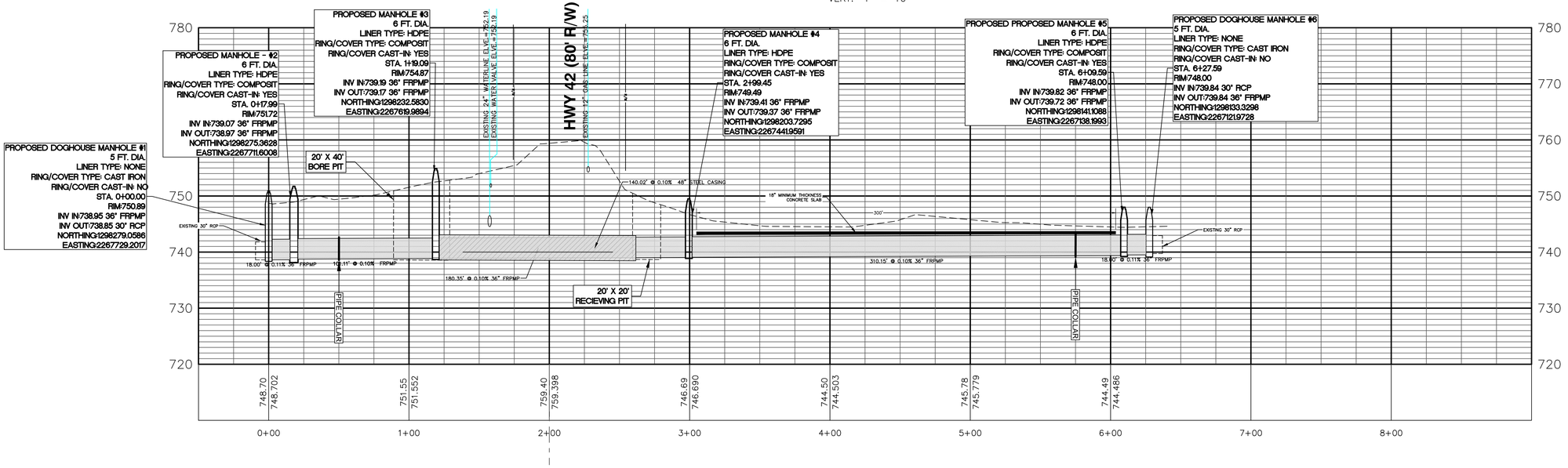
NOTE: SLOPES AND TANGENT LENGTHS ARE CALCULATED FROM CENTER OF MANHOLE. INSIDE EDGE LENGTH IS FOOTAGE OF PIPE INSTALLED.

ALL HDPE LINED MANHOLES TO HAVE A-LOCK GASKETS.

–PLAN–
SCALE: 1" = 40'

NOTE: REQUIRES FLOW BY-PASS WITH PEAK FLOWS OF 6,400 GPM

–PROFILE–
SCALE: HORZ. 1" = 40'
VERT. 1" = 10'



PLANS PREPARED BY:

CLAYTON COUNTY Water AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:

GENERAL PIPE WORK
SEWER WORK
FOR EXAMPLE

LAND LOT 103 DISTRICT 12
HENRY COUNTY, GEORGIA

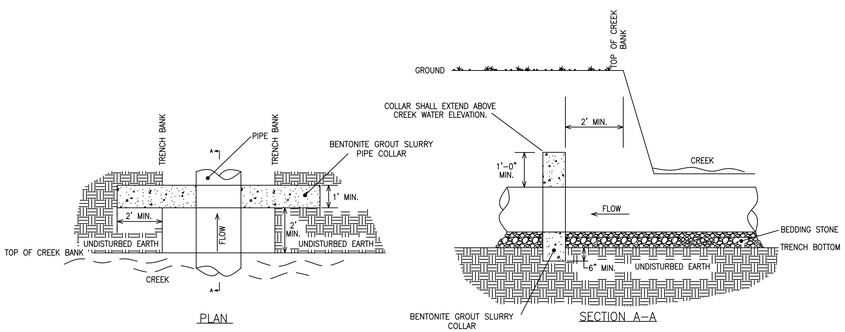
SEAL:

REVISIONS:

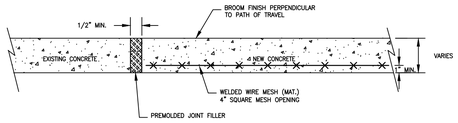
DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: PLAN AND PROFILE

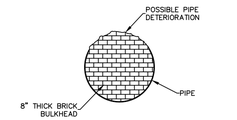
DESIGN BY: CCWA	DATE: 2/4/2024
DRAWN BY: MAS	JOB #:
CHECKED BY:	DRAWING #: P-1
	SCALE: 1" = 40'
	SHEET NUMBER 3 OF 7



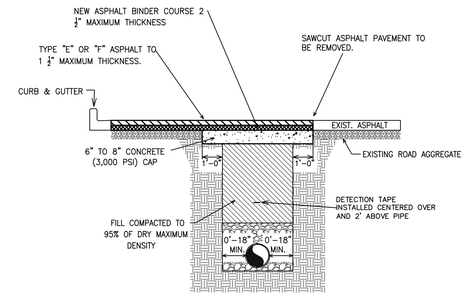
TYPICAL PIPE COLLAR
N.T.S.



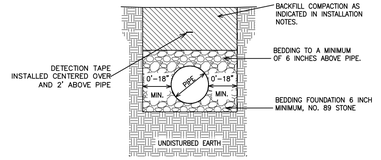
TYPICAL CONCRETE PAVEMENT
N.T.S.



BULKHEAD FOR ABANDONED PIPE
N.T.S.

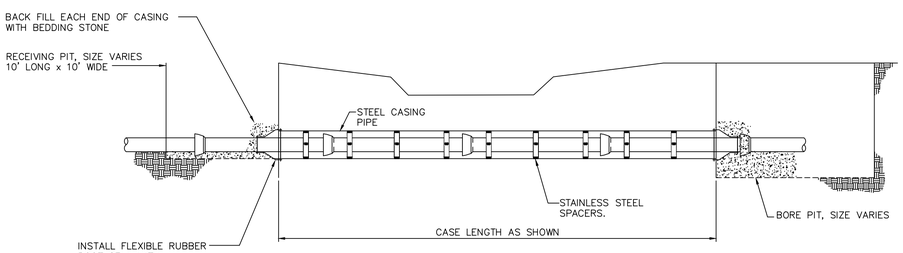


TYPICAL ASPHALT DETAIL
N.T.S.



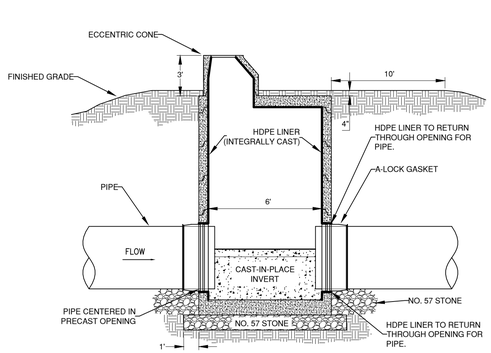
NOTE: 1) UNSUITABLE SOILS ENCOUNTERED IN BOTTOM OF EXCAVATED TRENCH SHALL BE EXCAVATED & REPLACED WITH NO. 57 STONE. ONLY SUITABLE SOIL SHALL BE USED AS BACKFILL.

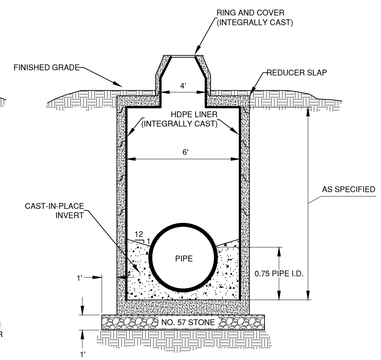
PIPE BEDDING DETAIL "A"
N.T.S.



NOTE: PLACEMENT OF SPACERS SHALL BE THREE PER JOINT OF PIPE.

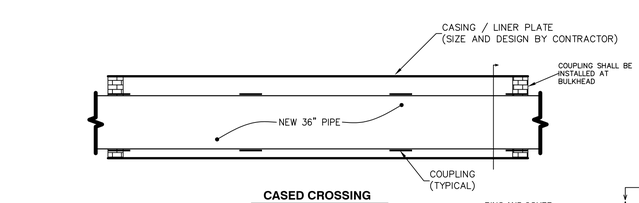
TYPICAL CASING AT CREEK CROSSING
N.T.S.



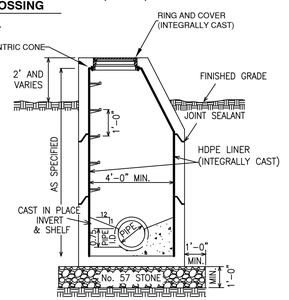


LARGE DIAMETER MANHOLE SECTION
N.T.S.

1. MAINTAIN 1/2" CLEARANCE BETWEEN PIPE AND CAST-IN PLACE INVERT AT ALL EDGES / SURFACES.
2. SHELF AND INVERT SHALL BE TROWEL FINISHED.
3. WHEN BRICK IS USED AS A FILLER, PROVIDE MINIMUM 2 INCHES GROUT OVER BRICK.
4. INSTALL 4' DIAMETER CONE SECTION ON THE UPSTREAM SIDE OF THE LARGE DIAMETER MANHOLE.



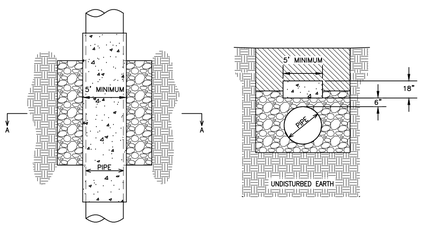
CASED CROSSING
N.T.S.



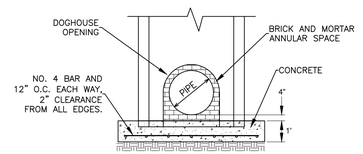
NOTES:

1. MAINTAIN 1/2" CLEARANCE BETWEEN PIPE AND CAST-IN PLACE INVERT AT ALL EDGES / SURFACES.
2. SHELF AND INVERT SHALL BE TROWEL FINISHED.
3. WHEN BRICK IS USED AS A FILLER, PROVIDE MINIMUM 2 INCHES GROUT OVER BRICK.

SMALL DIAMETER MANHOLE SECTION
N.T.S.



CONCRETE SLAB OVER PIPE TO RESIST FLOTATION
N.T.S.



DOGHOUSE MANHOLE OVER EXISTING SEWER
N.T.S.

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED BY A GEORGIA LICENSED UTILITY CONTRACTOR.
2. CONTRACTOR SHALL HAVE A CLAYTON COUNTY WATER AUTHORITY APPROVED SET OF PLANS ON THE JOB SITE AT ALL TIMES.
3. CONTRACTOR SHALL NOTIFY THE CLAYTON COUNTY WATER AUTHORITY 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. (770 961-2130)
4. CONTRACTOR SHALL VERIFY LOCATION AND DEPTHS OF ALL EXISTING UTILITIES IN THE PROJECT AREA PRIOR TO BEGINNING CONSTRUCTION.
5. CCWA SHALL OBTAIN ALL LAND DISTURBANCE ACTIVITY AND GRADING PERMITS.
6. ALL PERMANENT EASEMENTS AND CONSTRUCTION EASEMENTS SHALL BE OBTAINED BY CLAYTON COUNTY WATER AUTHORITY BEFORE CONSTRUCTION BEGINS.
7. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIAL UNLESS OTHER WISE INDICATED IN THE CONTRACT DOCUMENTS.
8. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY FOR SECURING/STABILIZING UTILITY POLES.
9. ALL PETROLEUM PRODUCTS SHALL BE STORED AND USED IN AN AREA THAT PROVIDES A SECONDARY CONTAINMENT FEATURE, AND SHALL BE LOCATED IN AN AREA WITH THE LEAST FORESEEABLE IMPACT IF A CATASTROPHIC EVENT SHOULD OCCUR. EMERGENCY CONTACT NUMBERS AND PROCEDURES FOR SPILLS SHALL BE AVAILABLE ON-SITE.

SITE PREPARATION AND COMPLETION

1. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE CONSTRUCTION LIMITS INDICATED ON THE APPROVED PLANS.
2. CONTRACTOR SHALL TO PERFORM ALL SURVEY WORK ON PROJECT.
3. CONTRACTOR SHALL, AT ALL TIMES, MAINTAIN FLAG MEN, SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER SAFETY DEVICES IN ACCORDANCE WITH THE DOT'S CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND AS MAY BE NECESSARY TO PROPERLY PROTECT TRAFFIC UPON THE ROAD AND TO WARN AND SAFEGUARD THE PUBLIC AGAINST INJURY OR DAMAGE.
5. MATERIAL STAGING AREA SHALL BE COORDINATED WITH CCWA.
6. THE 60-FOOT WIDE CONSTRUCTION LANE MAY BE CLEARED AT THE CONTRACTOR'S DISCRETION. A 20-FOOT WIDE LANE CENTERED OVER THE PIPE ALIGNMENT SHALL BE CLEARED OF ALL TREES AND DEBRIS.
6. TREES, ASPHALT, AND OTHER CONSTRUCTION DEBRIS SHALL BE REMOVED OFF SITE BY CONTRACTOR.
7. EXCAVATED SOIL NOT USED IN BACK FILL SHALL BE REMOVED OFF SITE BY CONTRACTOR.
8. REMOVE/REPLACE FENCING AS NECESSARY TO FACILITATE CONSTRUCTION. NO FENCING SHALL BE LEFT DOWN/NOT SECURED OVERNIGHT. ANY FENCING DAMAGED SHALL BE REPLACED WITH NEW TO MATCH EXISTING CONDITIONS AND DIMENSIONS.

EXCAVATION

1. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLY AND REPLACEMENT OF ROCK EXCAVATION WITH SUITABLE SOIL. SUITABLE SOIL SHALL BE SOIL THAT DOES NOT CONTAIN ORGANIC DEBRIS LARGER OR ROCK GREATER THAN 3 INCH IN SIZE.
2. TRENCH BOXES SHALL BE UTILIZED WHEN TRENCHING THROUGH RESIDENTIAL PROPERTY AND PUBLIC RIGHT OF WAYS.

INSTALLATION

1. PIPES SHALL BE LAID IN ACCORDANCE WITH APPLICABLE DETAILS. OVER EXCAVATION OR REMOVAL OF UNSUITABLE SOIL SHALL BE REPLACED WITH STONE.
2. PIPES SHALL BE LAID IN DRY CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING.
3. LAYING AND JOINTING OF PIPE AND FITTINGS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. DAMAGED PIPE AND FITTINGS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AS REQUIRED BY THE CCWA. REPAIRS SHALL BE COMPLETED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. MANHOLE COVERS NOT LOCATED IN PAVEMENT SHALL BE INTEGRALLY CAST IN THE TOP CONE SECTION.
6. MANHOLES NOT LOCATED IN PAVED AREAS SHALL HAVE A RIM ELEVATION NOT LESS THAN 24 INCHES FROM FINISHED GROUND ELEVATION. UNLESS OTHERWISE NOTED.
7. MAINTAIN A 10-FOOT HORIZONTAL SEPARATION AND A 24-INCH VERTICAL SEPARATION BETWEEN ALL WATER AND SEWER LINES UNLESS INDICATED OTHERWISE.
8. INSTALL WARNING TAPE ABOVE PIPE AS INDICATED ON TYPICAL PIPE DETECTION INSTALLATION DETAIL.
9. FROM THE BOTTOM OF PIPE TO 1/2 PIPE DIAMETER, BACK FILL MATERIAL SHALL BE SHOVEL SLICED PRIOR TO COMPACTING.
10. BACK FILL UNDERLYING PAVEMENT, DIRT AND GRAVEL ROADS AND ROAD RIGHT OF WAYS SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR ANALYSIS (ASTM D-698).
11. BACK FILL NOT UNDERLYING PAVED AREAS SHALL BE COMPACTED TO 90% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR ANALYSIS (ASTM D-698).
12. CREEK CROSSINGS SHALL BE ACCOMPLISHED USING MUD MATS WITH BOTTOM OF MAT ELEVATION ABOVE SURFACE WATER LEVEL.
13. ANY EXISTING ROAD SIGN REMOVED FOR CONSTRUCTION SHALL BE REPLACED BY THE END OF THE WORKING DAY.
14. THE CONTRACTOR SHALL NOT CLOSE OR BLOCK ANY HIGHWAY, STREET, OR ROADWAY WITHOUT FIRST OBTAINING PERMISSION FROM THE PROPER AUTHORITIES.
15. A COUPLING SHALL BE INSTALLED AT BULKHEAD.

CONCRETE AND PAVEMENT

1. ALL CONCRETE SHALL HAVE A MINIMUM 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS NOTED OTHERWISE.
2. SAW CUT ASPHALT AND CONCRETE PAVEMENT TO BE REMOVED. CONTRACTOR SHALL MATCH NEW PAVEMENT EDGES TO EXISTING PAVEMENT EDGES.
3. WIDTH OF PAVEMENT AND CURB REPLACEMENT SHALL NOT EXCEED 12 FEET UNLESS NOTED OTHERWISE.
4. WORK PERFORMED THROUGH AREAS OF PAVEMENT SHALL BE IMMEDIATELY COMPLETED TO GRADE WITH GRADED AGGREGATE BASE. PAVEMENT SHALL BE REPLACED NO LATER THAN THE DAY AFTER REMOVAL. TEMPORARY PAVEMENT REPLACEMENT MAY BE ALLOWED AT THE DISCRETION OF THE CCWA INSPECTOR, ANY IN-PLACE PAVEMENT, ADJACENT TO WORK AREA, THAT IS DAMAGED PRIOR TO PERMANENT REPLACEMENT SHALL BE REMOVED AND REPLACED AT THE EXPENSE OF THE CONTRACTOR.
5. CONCRETE DRIVEWAY SHALL HAVE TOOLED OR SAW CUT CONTROL JOINTS SPACED AT NOT GREATER THAN 1.5 TIMES DRIVEWAY WIDTH. CONTROL JOINTS SHALL HAVE A MINIMUM DEPTH OF 1 INCH. SAW CUT CONTROL JOINT WITHIN 24 HOURS OF PLACING CONCRETE.
6. ALL DRIVEWAYS WHICH ARE OPEN CUT SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB) AND MAINTAINED UNTIL THE PAVEMENT IS REPLACED.
7. ALL CAST-IN-PLACE CONCRETE SHALL BE PLACED IN WOOD FORMS UNLESS NOTED OTHERWISE.
8. ALL FORM MATERIAL SHALL BE REMOVED PRIOR TO BACK FILL.
9. CONCRETE FORMS SHALL SUPPORT PLACED CONCRETE FOR A MINIMUM OF 12 HOURS UNLESS NOTED OTHERWISE.
10. CONCRETE TRUCK WASHOUT SHALL BE CONTAINED WITHIN TRENCH WITH NO MATERIAL LEAVING THE SITE OR IMPACTING VEGETATED OR NON-DISTURBED AREAS.

PIPE TESTING

1. TESTING SHALL BE PERFORMED WHEN ALL BACKFILL TO FINISHED AND COMPACTION ARE COMPLETE AND DEWATERING HAS BEEN DISCONTINUED FOR A MINIMUM 24 HOUR PERIOD AT THE LOCATION OF THE TEST.
2. AIR PRESSURE TESTING: GRAVITY SEWER PIPE 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 SHALL BE CONSIDERED ACCEPTABLE WHEN AN AIR PRESSURE EQUIVALENT TO THE STABILIZED PRESSURE IS MAINTAINED FOR A PERIOD OF 5 MINUTES.
3. TELEVISING: GRAVITY SEWER PIPE SHALL BE TELEVISED TO ENSURE INTEGRITY. TEST SHALL BE CONSIDERED ACCEPTABLE WHEN THE TELEVISED PIPE DOES NOT REVEAL THE FOLLOWING: CRACKS IN PIPE, PROTRUDING GASKETS, LEAKING JOINTS, PIPE DEFORMATIONS, OTHER DEFICIENCIES.
4. DEFORMATION TESTING: GRAVITY SEWER PIPE SHALL BE TESTED FOR DEFORMATION OF THE PIPE. PIPE SHALL BE FREE OF DIRT AND DEBRIS. DEFORMATION MAY NOT BE MORE THAN 5% OF THE PIPE'S MANUFACTURED PUBLISHED DIAMETER. DEFORMATION SHALL BE DETERMINED BY USING A STANDARD MEASURING DEVICE THROUGHOUT THE ENTIRE LENGTH OF THE PIPE SEGMENTS. TEST SHALL BE CONSIDERED ACCEPTABLE WHEN MEASURED DEFORMATION IS LESS THAN 5% OF THE PIPE'S MANUFACTURED PUBLISHED INSIDE DIAMETER.

MANHOLE TESTING

1. VISUAL TESTING: EACH MANHOLE SHALL BE TESTED. MANHOLE TESTING SHALL BE PERFORMED BY VISUALLY OBSERVING FOR WATER INFILTRATION AT ALL MANHOLE SECTIONS, AT ALL MANHOLE / RUBBER BOOT SEAL CONNECTIONS. TESTING SHALL BE PERFORMED WHEN ALL BACKFILL TO FINISH GRADE AND COMPACTION ARE COMPLETE AND DEWATERING HAS BEEN DISCONTINUED FOR A MINIMUM 24 HOUR PERIOD AT THE LOCATION OF THE TEST AND PRIOR TO SEALING HDPE LINER JOINTS. TEST SHALL BE CONSIDERED ACCEPTABLE WHEN NO WATER INFILTRATION IS OBSERVED AT ANY DESCRIBED OBSERVATION POINTS.

811 Know what's below. Call before you dig.

PLANS PREPARED BY:

CLAYTON COUNTY Water AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:

GENERAL PIPE WORK
SEWER WORK
FOR EXAMPLE

LAND LOT 103 DISTRICT 12
HENRY COUNTY, GEORGIA

SEAL:

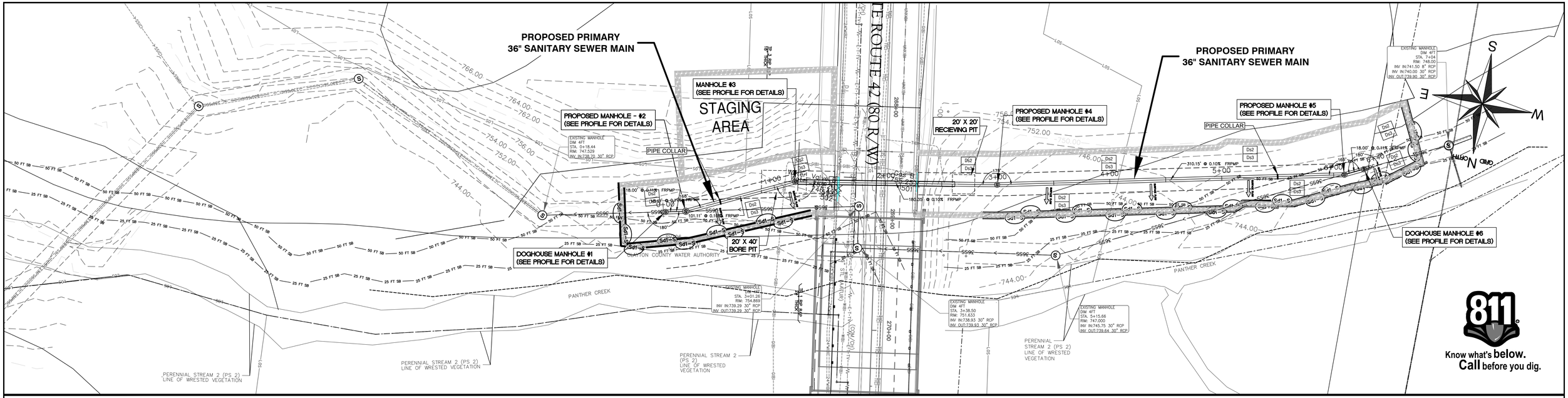
REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: CONSTRUCTION DETAILS

DESIGN BY: CCWA	DATE: 2/4/2024
DRAWN BY: MAS	JOB #:
CHECKED BY:	DRAWING #: P-2
	SCALE: N.T.S.

SHEET NUMBER 4 OF 7



THE GRAPHICAL SCALE IS SHOWN ONLY FOR PERMITTING REQUIREMENTS. THE GRAPHICAL SCALE SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.

GRAPHIC SCALE

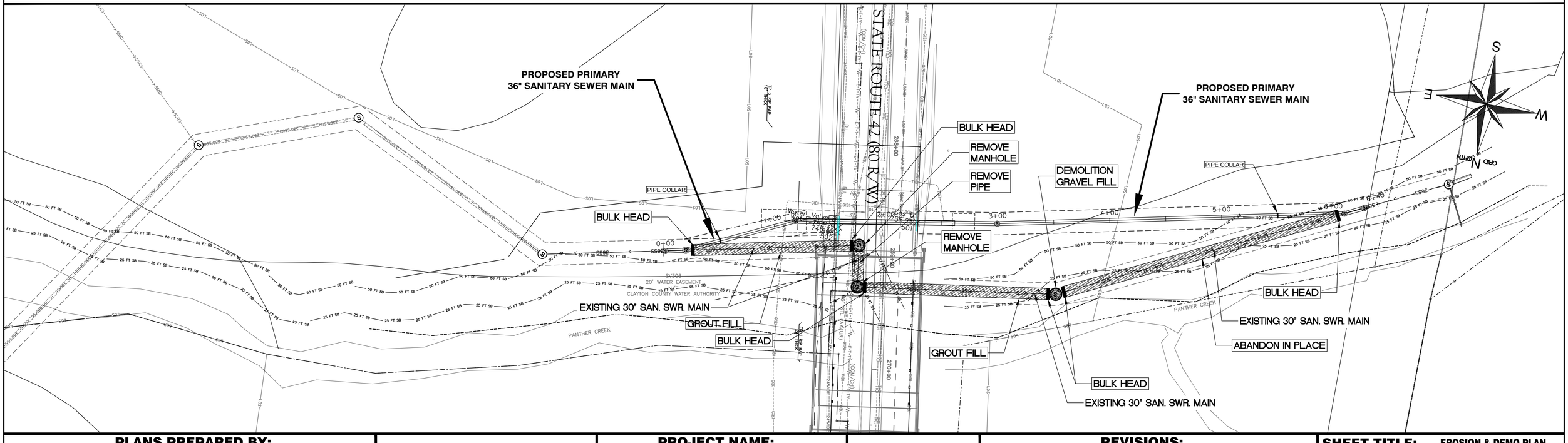
40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

–PLAN–
SCALE: 1" = 40'

NOTE: SLOPES AND TANGENT LENGTHS ARE CALCULATED FROM CENTER OF MANHOLE. INSIDE EDGE LENGTH IS FOOTAGE OF PIPE INSTALLED.

NOTES: 1) ALL DRIVEWAYS AND ROADS SHALL BE OPEN-CUT UNLESS NOTED OTHERWISE.
2) CONTRACTOR SHALL REESTABLISH DRAIN DITCHES ALTERED DURING CONSTRUCTION TO AVOID EROSION.



PLANS PREPARED BY:

CLAYTON COUNTY WATER AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:

GENERAL PIPE WORK
SEWER WORK
FOR EXAMPLE

LAND LOT 103 DISTRICT 12
HENRY COUNTY, GEORGIA

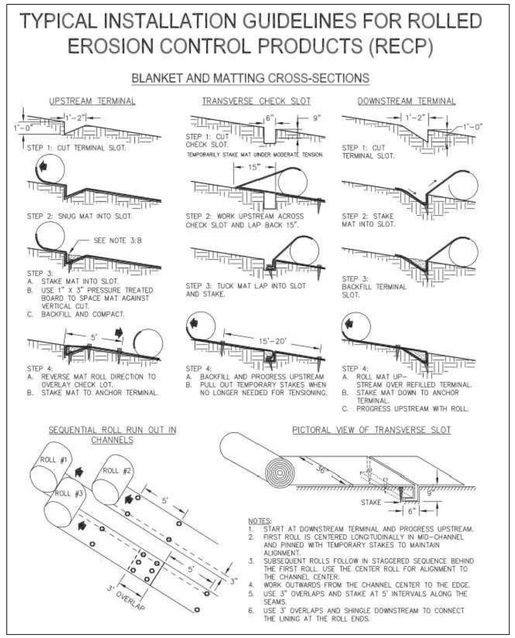
SEAL:

REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: EROSION & DEMO PLAN

DESIGN BY: CCWA	DATE: 02/26/24
DRAWN BY: MAS	JOB #:
CHECKED BY:	DRAWING #: ES-1
	SCALE: 1" = 40'
	SHEET NUMBER 5 OF 7



SLOPE STABILIZATION Ss

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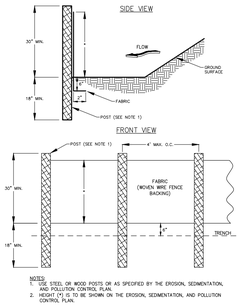

TYPE "S" SILT FENCE Sd1-S

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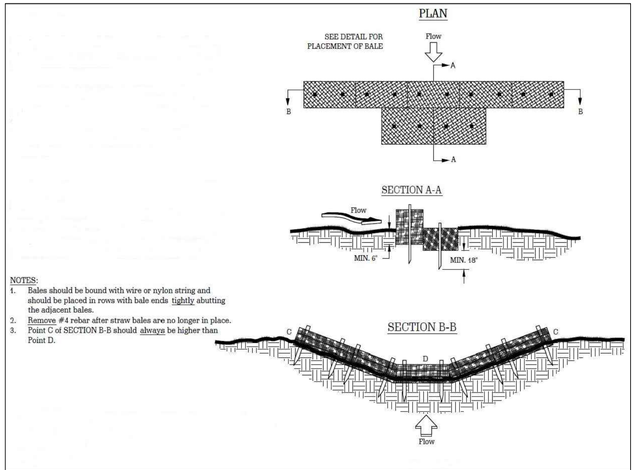

HAY BALE CHECK DAM Cd-Hb

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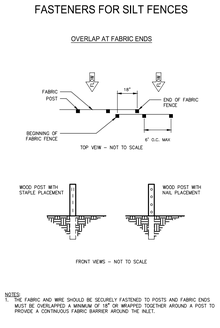
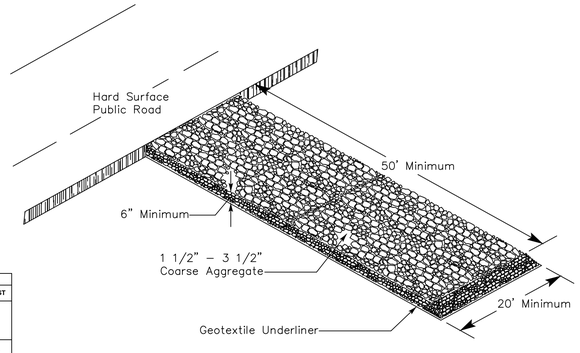


POST SIZE			
TYPE	MIN. LENGTH	TYPE OF POST	SIZE
NS	4'	SOFT WOOD OAK STEEL	3" DIA. OR 2x4 1.5" x 1.5" 1.3 lb. / ft. min.
S	4'	STEEL OAK	1.3 lb. / ft. min. 2"x2"

FASTENERS FOR WOOD POST				
	GUAGE	CROWN	LEGS	STAPLES / POST
WIRE STAPLES	17 min.	3/4" WIDE	1/2" LONG	5 min.
	GUAGE	LENGTH	BUTTON HEADS	NAIL / POST
NAILS	14min.	1"	3/4"	4 min.
NOTE: FILTER FABRIC MAY ALSO BE ATTACHED TO THE POST BY WIRE, CHORS, AND POCKETS OR ANY OTHER METHOD PROVIDED MINIMUM P-FACTOR, AS REQUIRED BY GSWCC, IS MET.				



CRUSHED STONE CONSTRUCTION EXIT

CONSTRUCTION EXIT Co

N.T.S.

Know what's below. Call before you dig.

PLANS PREPARED BY:		PROJECT NAME:		REVISIONS:				SHEET TITLE: EROSION CONTROL DETAILS	
CLAYTON COUNTY WATER AUTHORITY 1600 BATTLE CREEK ROAD MORROW, GEORGIA 30260	THESE DRAWINGS ARE THE PROPERTY OF CLAYTON COUNTY WATER AUTHORITY AND MAY NOT BE REPRODUCED, COPIED, OR OTHERWISE REUSED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN CONSENT OF CLAYTON COUNTY WATER AUTHORITY. THE ACCEPTANCE OF THESE DRAWINGS SHALL BE CONSTRUED AS AN ACCEPTANCE OF THE FOREGOING AGREEMENT.	GENERAL PIPE WORK SEWER WORK FOR EXAMPLE LAND LOT 103 DISTRICT 12 HENRY COUNTY, GEORGIA	SEAL:	DATE:	NO.:	REQUESTED BY:	DESCRIPTION:	DESIGN BY: CCWA DRAWN BY: MAS CHECKED BY:	DATE: 2/4/2024 JOB #: DRAWING #: ES-2 SCALE: N.T.S.
Providing Quality Water and Quality Services To Our Community									SHEET NUMBER 6 OF 7

TEMPORARY VEGETATION COVER

1/ Temporary cover crops are very competitive and will crown out perennials if seeded too heavily.
2/ Reduce seeding rates by 50% when drilled.
3/ PLS is an abbreviation for Pure Live Seed.
Chart represents the Southern Piedmont Major Land Resource Area of Georgia.

SPECIES	BROADCAST RATES 2/ - PLS 3/ PER ACRE	PER 1000 SQ FT	PLANTING DATES (THICK LINES INDICATE OPTIMUM DATES, DASHED LINES INDICATE PERMISSABLE BUT MARGINABLE DATES.) J F M A M J J A S O N D
LESPEDEZA, ANNUAL (Lespedeza striata) ALONE	40 LB.	0.9 LB.	
IN MIXTURES	10 LBS.	0.2 LB.	
LOVEGRASS, WEEPING (Eragrostis curvula) ALONE	4 LBS.	0.1 LB.	
IN MIXTURES	2 LBS.	0.05 LBS.	
MILLET, BROWNTOP (Panicum fasciculatum) ALONE	40 LBS.	0.9 LB.	
IN MIXTURES	10 LBS.	0.2 LB.	
MILLET, PEARL (Pennesetum glaucum) ALONE	50 LBS.	1.1 LB.	
RYEGRASS, ANNUAL (Lolium temulentum) ALONE	40 LBS.	0.9 LB.	
WHEAT (Triticum aestivum) ALONE	3 BU. (180 LBS.)	4.1 LBS.	
IN MIXTURES	1/2 BU. (30 LBS.)	0.7 LB.	

Ds2

PERMANENT VEGETATION COVER

1/ Reduce seeding rates by 50% when drilled.
2/ PLS is an abbreviation for Pure Live Seed.
Chart represents the Southern Piedmont Major Land Resource Area of Georgia.

SPECIES	BROADCAST RATES 1/ - PLS 2/ PER ACRE	PER 1000 SQ FT	PLANTING DATES (THICK LINES INDICATE OPTIMUM DATES, DASHED LINES INDICATE PERMISSABLE BUT MARGINABLE DATES.) J F M A M J J A S O N D
BERMUDA, COMMON (Cynodon dactylon)Hulled seed ALONE	10 LBS.	0.2 LB.	
WITH OTHER PERENNIALS	6 LBS.	0.1 LB.	
BERMUDA, COMMON (Cynodon dactylon)Unhulled seed WITH TEMP. COVER	10 LBS.	0.2 LB.	
WITH OTHER PERENNIALS	6 LBS.	0.1 LB.	
BERMUDA SPRIGS (Cynodon dactylon)Unhulled seed COASTAL, COMMON, OR TIFT 44	40 CU. FT.	0.9 CU. FT	
	SOD PLUGS 3' X 3'	SOD PLUGS 3' X 3'	
CENTIPEDE (Eremochloa ophiuroides)	BLOCK SOD ONLY		
CROWN VETCH (Coronilla varia) WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS.	0.3 LB.	
FESCUE, TALL (Festuca arundinacea) ALONE	50 LBS.	1.1 LB.	
WITH OTHER PERENNIALS	30 LBS.	0.7 LB.	
LOVEGRASS, WEEPING (Eragrostis curvula) ALONE	4 LBS.	0.1 LB.	
WITH OTHER PERENNIALS	2 LBS.	0.05 LB.	

Ds3

FERTILIZER REQUIREMENTS

1/ Apply in spring following seeding.
2/ Apply in split applications when high rates are used.
3/ Apply in 3 split applications.
4/ Apply when plants are pruned.
5/ Apply to grass species only.
6/ Apply when plants grow to a height of 2 to 4 inches.

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. Cool season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/ 2/ - 30
2. Cool season and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ - -
3. Ground covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1300 lbs./ac. 3/ 1300 lbs./ac. 3/ 1100 lbs./ac.	- - -
4. Temporary cover crops seeded alone	First	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
5. Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/ 6/ 50-100 lbs./ac. 2/ 30 lbs./ac.
5. Warm season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50 lbs./ac. 6/

Ds3

Temporary Sediment Storage

Drainage Area: 1.12 acres.
Temporary sediment storage required: 67 cy/acre x 1.12 acres = 7,504 cy.
Sd1 is suited to treat sediment from sheet flow.
1' of Sd1=2.22 cy storage
1,384 L.F. of Sd1 = 3,072 cy Storage
3,072 cy of storage provided

The temporary storage of sediment using Sd1 is applicable to this project due to stormwater discharge from the site is via sheet flow: The minimum sediment storage requirement is not being met, but appropriate BMP's for the site have been design and should be sufficient to control erosion.

The State 25ft. buffer is not being impacted.

The State Henry County 50ft buffer is being impacted at station 0+00, however this a exempt activity due to it being sewer line construction.

GRADED RIP-RAP STONE

1. GEORGIA DEPARTMENT OF TRANSPORTATION

D.O.T. NO. 1	SIZE INCHES (SQ. OPENING) MAX.	AVG. 2	MIN.	COMMON USES
TYPE 3	12	9	5	CREEK BANKS PIPE OUTLETS LAKES & SHORELINES
TYPE 1	24	12	7	RIVERS

TABLE C-3

GRADED RIP-RAP STONE

1. NATIONAL STONE ASSOCIATION.
2. AT LEAST 50% OF THE INDIVIDUAL STONE PARTICLES MUST BE EQUAL OR LARGER THAN THIS LISTED SIZE.

FLOW VELOCITY (FT./SEC.)	N.S.A. NO. 1	SIZE INCHES (SQ. OPENING) MAX.	AVG. 2	MIN.	FILTER STONE N.S.A. NO. 1
2.5	R-1	1 1/2	3/4	NO. 8	FS-1
4.5	R-2	3	1 1/2	1	FS-1
6.5	R-3	6	3	2	FS-2
9.0	R-4	12	6	2	FS-2
11.5	R-5	18	9	5	FS-2
13.0	R-6	24	12	7	FS-3
14.5	R-7	30	15	12	FS-3

Appendix A – Woody Plants for Soil Bioengineering and Associated Systems in Georgia

Scientific Name	Common Name	Plant Type	Region *	Establishment Speed
Acer negundo	boxelder	small to medium tree		fast
Acer rubrum	red maple	medium tree	M, P, C	fast
Alnus serrulata	smooth alder	large shrub	M, P, C	medium
Amorpha fruitcosa	false indigo	shrub	M, P, C	fast
Aronia arbutifolia	red chokeberry	shrub	M, P, C	fast
Asimina triloba	pawpaw	small tree	M, P, C	
Betula nigra	river birch	medium to large tree	M, P, C	fast
Carpinis caroliniana	american hornbeam	small tree	M, P, C	slow
Carya cordiformis	bitternut hickory	tree	P, C	
Catalpa bignonioides	southern catalpa	tree	P, C	fair
Celtis laevigata	sugarberry	medium tree	P, C	slow
Celtis occidentalis	hackberry	medium tree	P, C	slow
Cephalanthus occidentalis	buttonbush	large shrub	M, P, C	medium
Chionanthus virginicus	fringe tree	small tree	P, C	
Clethera ainifolia	sweet pepperbush	shrub	P, C	
Cornus amomum	silky dogwood	small shrub	M, P	medium
Cornus florida	flowering dogwood	small tree	M, P, C	fair
Cyrilla racemiflora	titi	small tree	C	
Diospyros virginiana	persimmon	medium tree	M, P, C	fair
Fraxinus caroliniana	carolina ash	large tree	C	fast
Fraxinus pennsylvanica	green ash	medium tree	M, P, C	fast
Gleditsia triacanthos	honeylocust	medium tree	P, C	fast
Hibiscus aculeatus	hibiscus	shrub	C	
Ilex coriacea	sweet gallberry	small to large shrub	C	
Ilex decidua	possomhaw	large shrub to small tree	P, C	
Ilex glabra	bitter gallberry	small shrub	C	
Ilex opaca	american holly	small tree	M, P, C	medium
Ilex verticillata	winterberry	small to large shrub	M, P	
Ilex vomitoria	yaupon	large shrub	C	
Juglans nigra	black walnut	medium tree	M, P	fair
Juniperus virginiana	eastern redcedar	large tree	M, P, C	medium
Leucothoe axillaries	leucothoe	small to large shrub	C	
Lindera benzoin	spicebush	shrub	M	
Liquidambar styraciflua	sweetgum	large tree	M, P, C	
Liriodendron tulipifera	tulip poplar	large tree	M, P	fast
Lyonia lucida	fetterbush	small to large shrub	C	
Magnolia virginiana	sweetbay	small tree	P, C	
Myrica cerifera	southern waxmyrtle	small shrub	C	slow
Nyssa aquatica	swamp tupelo	large tree	C	slow
Nyssa ogeeche	ogeeche lime	large shrub to small tree	C	medium
Nyssa sylvatica	blackgum	tall tree	M, P, C	slow
Ostrya virginiana	hophornbean	small tree	M, P, C	slow
Persea borbonia	redbay	small to large tree	C	slow
Platanus occidentalis	sycamore	large tree	M, P, C	fast
Populus deltoides	eastern cottonwood	tall tree	M, P, C	fast
Quercus alba	white oak	large tree	M, P, C	slow
Quercus laurifolia	swamp laurel oak	tree	C	fast
Quercus lyrata	overcup oak	medium tree	P, C	slow
Quercus michauxii	swamp chestnut oak	medium tree	M, P, C	fair
Quercus nigra	water oak	medium tree	M, P, C	slow
Quercus palustris	pin oak	large tree	M	fast
Quercus phellos	willow oak	medium to large tree	M, P, C	medium
Quercus shumardii	shumard oak	large tree	P, C	slow
Rhododendron atlanticum	coast azalea	small shrub	P, C	
Rhododendron viscosum	swamp azalea	shrub	P, C	
Salix nigra	black willow	small to large tree	M, P, C	fast
Taxodium distichum	baldcypress	medium tree	C	fast
Tsuga canadensis	eastern hemlock	large tree	M	slow
Viburnum nudum	swamp haw	large shrub	M, P, C	

*M=Mountain, P=Piedmont, C=Coastal

NOTE: EPD recommends that trees be planted at a density of 10 feet on center (ft o.c.) or 436 trees per acre. If planted alone, shrubs should be planted at an average density of 6 ft o.c. (1210 shrubs per acre) and groundcovers (4" containers) at an average density of 1.5 ft o.c. (19,360 containers per acre). When combined with planting trees, shrubs and/or groundcover may be planted at a density of 774 shrubs per acre and 18,150 containers per acre. Live stakes are typically planted at 2 ft o.c. Please reference http://www.soundnativeplants.com/calculator.htm for further planting density information.

Appendix B – Plants Suitable for Rooting as Cuttings (Live Stakes) in Georgia

Scientific Name	Common Name	Plant Type	Rooting Ability¹	Region
Acer negundo	boxelder			M, P, C
Asimina triloba	pawpaw	small tree	poor to fair	M, P, C
Baccharis halimifolia	groundsel bush	medium shrub	good	P, C
Cephalanthus occidentalis	buttonbush	large shrub	fair to good	M, P, C
Cornus amomum	silky dogwood	small shrub	fair	M, P
Cornus sericia	red osier dogwood			M, P
Gleditsia triacanthos	honeylocust	medium tree	poor to fair	P, C
Populus deltoides	eastern cottonwood	tall tree	very good	M, P, C
Robinia sp.	black locust			P, M
Salix discolor	pussy willow	large shrub	very good	
Salix nigra	black willow	small to large tree	good to excel	M, P, C
Salix purpurea	purpleosier willow	medium tree	excel	M, P, C
Sambucus canadensis	american elder	medium shrub	good	M, P
Viburnum dentatum	arrowwood	medium to tall shrub	good	M, P, C
Viburnum lentago	nannyberry	large shrub	fair to good	M, P, C

¹ cutting

Appendix C – Grasses and Forbs Useful in Conjunction with Soil Bioengineering and Associated Systems in the Southeast

Scientific Name	Common Name	Soil Preference	Drought Tolerance	Shade Tolerance	Flood Tolerance
Ammophila breviligulata	american beachgrass	sands	fair	poor	
Andropogon gerardii	big bluestem	loams	good	poor	fair
Arundo donax	giant reed	sandy	good	poor	poor
Hexarthria altissima	limpograss	sandy	poor	poor	good
Panicum amarulum	coastal panicgrass	sands to loams	good	poor	good
Panicum virgatum	switchgrass	loams to sands	good	poor	good
Paspalum vaginatum	seashore paspalum	sandy		poor	good
Pennisetum purpureum	elephant grass			poor	
Spartina pectinata	prarie cordgrass	sands to loams	good	fair	fair
Zizaniopsis miliacea	giant cutgrass	loam	poor	poor	good

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD: ____________
Project Name: SR 42 at Panthers Creek Sewer **Address:** 9344 GA-42, Rex, GA 30273
Local Issuing Authority: CCWA **Date on Plans:** 2/4/2024
Name & Email of person filling out checklist: Michael Shinn (michael.shinn@ccwa.us)

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N	Item
	N	1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
	N	2 Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed)
1	Y	3 The name and phone number of the 24-hour contact responsible for erosion, sedimentation and pollution controls.
1	Y	4 Provide the name, address, email address, and phone number of primary permittee.
	N	5 Note total and disturbed acreages of the project or phase under construction.
2	Y	6 Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
1	Y	7 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
1	Y	8 Descriptions of the nature of construction activity and existing site conditions.
1	Y	9 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
1	Y	10 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
1	Y	11 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on **Part IV page 21** of the permit.
	N/A	12 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on **Part IV page 20** of the permit. *
	N/A	13 Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on **Part IV.D.6.c.(3) page 37** of the permit as applicable. *
	N/A	14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements, perimeter control BMPs, and sediment basins within 7 days after installation." in accordance with **Part IV.A.5 page 26** of the permit. *
	N/A	15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
	N	16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
	N/A	17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional." *
	N/A	18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit." *
7	Y	19 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."
	N	20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
	N	21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
	N/A	22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of a Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment. *
	N/A	23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan. *
	N/A	24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited. *
7	Y	25 Provide BMPs for the remediation of all petroleum spills and leaks.
	N/A	26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed. *
	N/A	27 Description of practices to provide cover for building materials and building products on site. *
	N/A	28 Description of the practices that will be used to reduce the pollutants in storm water discharges. *
1	Y	29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
	N/A	30 Provide complete requirements of Inspections and record keeping by the primary permittee. *
	N/A	31 Provide complete requirements of Sampling Frequency and Reporting of sampling results. *
	N/A	32 Provide complete details for Retention of Records as per Part IV.F. of the permit. *
	N/A	33 Description of analytical methods to be used to collect and analyze the samples from each location. *
	N/A	34 Appendix B rationale for NTU values at all outfall sampling points where applicable. *
	N/A	35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged also provide a summary chart of the justification and analysis for the representative sampling as applicable. *
	N/A	36 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase. *
2	Y	37 Graphic scale and North arrow.
2	Y	38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following: Existing Contours – USGS 1": 2000' Topographical Sheets; Proposed Contours – 1" : 400' Centerline Profile
	N/A	39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by GAEPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.georgia.gov.
	N/A	40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition. *
2	Y	41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to State waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
2	Y	42 Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site.
	N	43 Delineation and acreage of contributing drainage basins on the project site.
	N	44 Delineate on-site drainage and off-site watersheds using USGS 1" :2000' topographical sheets.
	N	45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
	N/A	46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
2	Y	47 Soil series for the project site and their delineation.
2	Y	48 The limits of disturbance for each phase of construction.
7	Y	49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
7	Y	50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
7	Y	51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
7	Y	52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

* If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the * checklist items would be N/A.

Effective January 1, 2024

GENERAL NOTES

1. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER WORK IS IN PROGRESS.
2. EROSION AND SEDIMENT CONTROL SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR COMPLIANCE, INSTALLATION, MAINTENANCE AND REMOVAL AS REQUIRED BY THE STATE OF GEORGIA MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA 2016 EDITION AS PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THESE SPECIFICATIONS PRIOR TO ANY CONSTRUCTION ACTIVITIES. THE INSTALLATION OF THE REQUIRED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION.
3. **THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND-DISTURBING ACTIVITIES.**
4. FAILURE TO INSTALL, OPERATE AND/OR MAINTAIN ALL EROSION CONTROL MEASURES SHALL BE JUSTIFICATION TO STOP CONSTRUCTION ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED IN ACCORDANCE WITH THE APPROVED PLANS OR AS DIRECTED BY THE ENGINEER.

SITE PREPARATION

1. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.
2. MATERIAL STAGING AREA SHALL BE ENCOMPASSED WITH REFERENCED SILT FENCE.

DURING CONSTRUCTION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL CREATED BY DRAINAGE PATTERNS AT VARIOUS STAGES DURING CONSTRUCTION. EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES.
2. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
3. THE LOCATION OF SOME EROSION CONTROL DEVICES MAY BE ALTERED FROM THAT SHOWN ON PLANS AS APPROVED BY THE DESIGN ENGINEER AND HENRY COUNTY LAND DEVELOPMENT.
4. CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE PERIODIC DRESSING WITH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE OR SITE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN SHALL BE REMOVED IMMEDIATELY.
5. CONTROL DUST USING WATER OR OTHER METHODS AS REQUIRED TO PREVENT DUST FROM BEING A NUISANCE TO THE PUBLIC AND CONCURRENT WITH ON SITE WORK.
6. DISTURBED SOIL SHALL BE STABILIZED WITH EROSION AND SEDIMENT CONTROL MEASURES EACH DAY AND PRIOR TO ANY RAIN EVENT AS FOLLOWS. (A) DISTURBED SOIL SHALL BE RETURNED TO FINAL GRADE. (B) EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED. (C) GRADED SOIL SHALL BE TREATED WITH LIME AND FERTILIZER. (D) APPLY TEMPORARY AND/OR PERMANENT VEGETATION.
7. STRAW MULCHING SHALL BE USED WITH TEMPORARY AND PERMANENT VEGETATION APPLICATIONS AND SHALL BE FREE OF WEED SEEDS AND SPREAD AT A RATE OF 90 POUNDS PER 1,000 SQUARE FEET.
8. THE CONTRACTOR SHALL INSTALL MATTING AND BLANKETS WITHIN ALL DRAINAGE DITCHES UNLESS NOTED OTHERWISE.
9. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED BY THE CERTIFIED INSPECTOR AT THE END OF EACH DAYS WORK AND AT THE END OF EACH AND EVERY RAIN EVENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ANY FAILED OR INADEQUATELY INSTALLED SEDIMENT CONTROL DEVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES.
10. THE CONTRACTOR SHALL REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER.
11. ALL SILTS AND/OR SEDIMENT REMOVED FROM THE EROSION/SEDIMENT CONTROL DEVICES SHALL BE DISPOSED OF ONSITE IN SUCH A MANNER AS TO PREVENT SAID SILTS AND/OR SEDIMENTS FROM REENTERING THE CONTROL DEVICES AND/OR EXITING THE SITE THROUGH THE STORM DRAINAGE SYSTEMS AND/OR SURFACE DRAINAGE.
12. EROSION CONTROL MEASURES WILL BE MAINTAINED UNTIL ALL DISTURBED SOIL WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION.

SITE COMPLETION

1. FINAL STABILIZATION SHALL BE WITH SAME VEGETATION AS EXISTING. UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES WILL BE CONSIDERED ACCEPTABLE WHEN 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR EQUIVALENT PERMANENT STABILIZATION MEASURES HAVE BEEN USED.
2. THE CONTRACTOR SHALL REMOVE SILT FENCE IN AREAS THAT HAVE UNDERGONE FINAL STABILIZATION AS DETERMINED BY CCWA INSPECTOR. CONTRACTOR SHALL DISPOSE SAID SILT FENCE IN ACCORDANCE WITH LOCAL REGULATIONS.
3. CONTRACTOR SHALL CONTACT LOCAL COUNTY EXTENSION FOR WETLAND SPECIES TO REPLANT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND OR MAINTAINING ALL JOB SITE WORK AREAS THAT ARE BEING STABILIZED OR HAVE UNDERGONE FINAL STABILIZATION UNTIL CCWA HAS ISSUED A LETTER OF FINAL ACCEPTANCE.

COUNTY REQUIRED NOTES

1. THE PERSON ULTIMATELY RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL PRACTICES ON THIS SITE AND WHO IS TO BE CONTACTED IN THE EVENT OF A STOP WORK ORDER, IS:
CLIFF W. BEROSET
GSWCC LEVEL II CERTIFIED DESIGN PROFESSIONAL
CERTIFICATION NUMBER: 0000005289
OFFICE 678-422-2828
MOBILE 678-727-6444
2. ANY REVISION TO THE PLANS AFTER THE INITIAL SUBMITTAL, OTHER THAN THE RESPONSE TO THE PLAN REVIEW COMMENTS, WILL BE INDICATED ON REVISIONS AND SUBMITTED WITH A WRITTEN EXPLANATION OF THE REVISIONS AND THE REASONS.
3. ANY VARIATIONS FROM THE PERMITTED PLANS, CHANGES IN DESIGN RESULTING FROM FIELD CONDITIONS, OR SUBSTITUTION OF CONSTRUCTION MATERIALS ARE TO BE REVIEWED AND APPROVED BY THE RESPONSIBLE DESIGN ENGINEER AND CLAYTON COUNTY LAND DEVELOPMENT.
4. PLANS ARE REVIEWED IN GENERAL. SPECIFIC DETAILS AND CALCULATIONS MAY NOT BE CHECKED. THE ENGINEERS STAMP AND SIGNATURE GUARANTEES THE ACCURACY OF THE CALCULATIONS AND DESIGN. PLAN APPROVAL DOES NOT OBLIGATE THE COUNTY TO ACCEPT THE WORK, NOR DOES IT RELIEVE THE DEVELOPER AND / OR ENGINEER FROM COMPLIANCE WITH ANY OTHER COUNTY, STATE OR FEDERAL ORDINANCES AND LAWS. PLAN APPROVAL DOES NOT RELIEVE THE DEVELOPER FROM THE RESPONSIBILITY FOR DAMAGES TO ADJACENT OR DOWNSTREAM PROPERTY RESULTING FROM THIS DEVELOPMENT.

COUNTY REQUIRED NOTES (NOT APPLICABLE TO PROJECT)

1. STREAM BANK RESTORATION AND STABILIZATION ARE REQUIRED IN ALL DISTURBED STATE WATERS BUFFERS. GEOMAT AND RIP RAP ARE TO BE PLACED AS NECESSARY TO PREVENT EROSION WITHIN THE STREAM BANKS.
2. SANITARY SEWER EASEMENT ARE TO BE STABILIZED WITH TEMPORARY AND PERMANENT VEGETATION AS SOON AS EACH SEGMENT IS COMPLETED. STREAM BANK RESTORATION AND STABILIZATION REQUIRED IN ALL DISTURBED STATE WATERS BUFFERS. GEOMAT AND RIP RAP ARE TO BE PLACED AS NECESSARY TO PREVENT EROSION WITHIN THE STREAM BANKS.
3. AREAS USED AS BURIAL PITS DURING DEVELOPMENT MUST BE LOCATED OUTSIDE THE RIGHT-OF-WAY AND ARE TO BE LOCATED AND IDENTIFIED ON THE FINAL PLAT. GEORGIA DNR EPD REQUIREMENTS ARE TO BE MET: "NO PORTION OF WASTE DISPOSAL SHALL BE LOCATED WITHIN 100 LINEAR FEET OF ANY PROPERTY LINE OR ENCLOSED STRUCTURE".

PLANS PREPARED BY:

CLAYTON COUNTY Water AUTHORITY
Providing Quality Water and Quality Services To Our Community

CLAYTON COUNTY WATER AUTHORITY
1600 BATTLE CREEK ROAD
MORROW, GEORGIA 30260

PROJECT NAME:
GENERAL PIPE WORK
SEWER WORK
FOR EXAMPLE

LAND LOT 103 DISTRICT 12
HENRY COUNTY, GEORGIA

SEAL:

REVISIONS:

DATE:	NO.:	REQUESTED BY:	DESCRIPTION:

SHEET TITLE: EROSION CONTROL NPDES NOTES

DESIGN BY: CCWA	**DATE:**	2/4/2024
	JOB #:	
DRAWN BY: MAS	**DRAWING #:**	ES-3
CHECKED BY:	**SCALE:**	N.T.S.

Contractors Name
General Pipe Work
Contractors Address
Contractors Address
Contractors Phone Number
Contractors Fax Number
Contractors Email Address

Invoice # _____ Invoice Date: _____

Clayton County Water Authority

Project Work Order/Invoice
GENPIPE2

Project Number:		Contractor:	
Project Name:	Example Sewer Work	Acceptance By/Date:	
Purchase Order Number:		Days to Complete:	
Street Name/Address:		Start Date:	
CCWA Authorization:		**Estimated Total:**	**$0.00**
Authorization Date:		**Installed Total:**	**$0.00**

The Project Work Order summarizes work items and quantities to complete. Work items and quantities may be adjusted as necessary with prior CCWA approval.

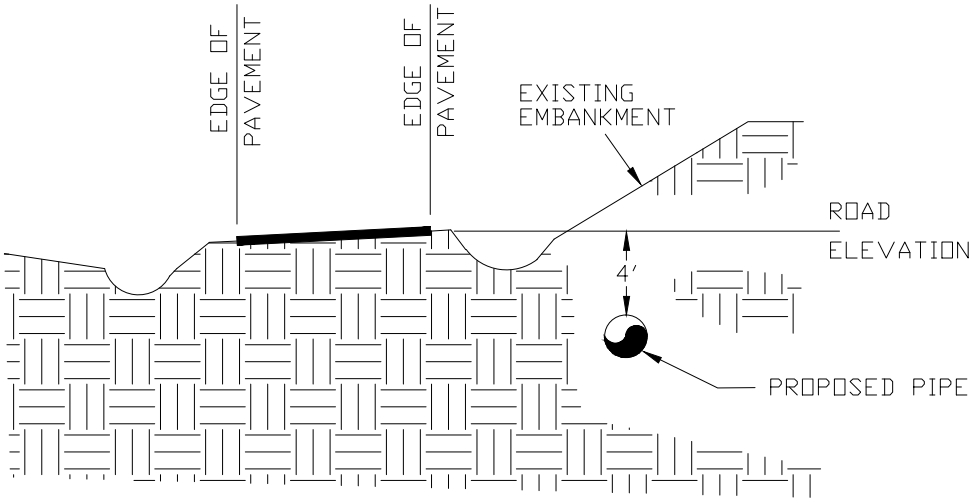
No.	Itm Master #	Work Item	Description 2	Unit	Unit Price	Estimated Quantity	Estimated Cost	Installed Quantity	Installed Cost
1	C-MOB-00009	Mobilization	Lowboy Service	EA		1.0	$ -		$ -
3	C-BND-00003	Performance and Payment Bonds	For Project Work Orders of $100,000 to $125,000	EA		1.0	$ -		$ -
4	C-BND-00004		For Each Additional $25,000 Increase	EA		23.0	$ -		$ -
5	C-ESC-00001	Construction Exit		EA		2.0	$ -		$ -
7	C-ESC-00004	Sediment Barrier Installation	Silt Fence - Type C	LF		400.0	$ -		$ -
9	C-ESC-00009	Sediment Barrier Removal		LF		400.0	$ -		$ -
12	C-ESC-00012	Soil Stabilization	Seed and Straw Mulch	SF		56,000.0	$ -		$ -
20	C-SWT-00030	Easement Clearing		SF		16,500.0	$ -		$ -
24	C-SW-00004	General Excavation	Greater than 6 feet to 10 feet deep	CF		2,500.0	$ -		$ -
28	C-SW-00008	General Fill / Backfill	Fill Dirt	CF		2,500.0	$ -		$ -
31	C-SW-00013		#3, #4, #34, #5, #57 and #89 Stone	CF		7,000.0	$ -		$ -
90	C-SWPU-00044	Pumping 8-inch Pump	Single Pump System	WK		3.0	$ -		$ -
91	C-SWPU-00045		Single Pump System	2WK		3.0	$ -		$ -
94	C-SWPU-00047		Redundant Pump System	WK		1.0	$ -		$ -
95	C-SWPU-00048		Redundant Pump System	2WK		1.0	$ -		$ -
383	C-PRR-00495	Pipe Installation - Open Cut FRPM greater than 24-inch to 36-inch	Point Repair, greater than 10 feet to 14 feet deep	EA		1.0	$ -		$ -
385	C-PRR-00497		Additional Footage, up to 6 feet deep	LF		178.0	$ -		$ -
386	C-PRR-00498		Additional Footage, greater than 6 feet to 10 feet deep	LF		190.0	$ -		$ -
387	C-PRR-00499		Additional Footage, greater than 10 feet to 14 feet deep	LF		99.0	$ -		$ -
438	C-LW-00052	Cased Bore 48"	Steered	LF		140.0	$ -		$ -
448	C-LW-00059	Bore Entry Pit	Greater than 12 feet deep to 18 feet deep	VF		15.0	$ -		$ -
451	C-LW-00064	Bore Receiving Pit	Greater than 6 feet deep to 12 feet deep	VF		11.0	$ -		$ -
461	?-??-?????	Directional Drill Mobilization		EA		1.0	$ -		
462	?-??-?????	Directional Drill Boring		LF		445.0	$ -		
497	C-CIP-00024	Pipe Collar		CF		108.0	$ -		$ -
511	C-PC-00025	Precast Manhole Installation 4-Foot Diameter	Riser	VF		25.0	$ -		$ -
512	C-PC-00032	Precast Manhole Installation 5-Foot Diameter	Base Slab	EA		2.0	$ -		$ -
513	C-PC-00033		Riser	VF		14.0	$ -		$ -
514	C-PC-00040	Precast Manhole Installation 6-Foot Diameter	Base Slab	EA		4.0	$ -		$ -
515	C-PC-00041		Riser	VF		33.0	$ -		$ -
535	C-CIP-00070	Manhole Invert Construction 5-Foot Diameter Manhole	Brick and Mortar	EA		2.0	$ -		$ -
537	C-CIP-00072	Manhole Invert Construction 6-Foot Diameter Manhole	Brick and Mortar	EA		4.0	$ -		$ -
548	C-CIP-00083	Ring and Cover Installation	Installation	EA		2.0	$ -		$ -
556	C-CIP-00085	Brick Work	1 Brick Deep Wall Construction	SF		30.0	$ -		$ -
560	C-CIP-00089	Concrete Work	Bulk	CY		87.0	$ -		$ -
564	C-CIP-00096	Cementitious Grouting	Grout Mixed by Plant	CY		65.0	$ -		$ -
565	C-CIP-00097		Pump Mobilization	EA		2.0	$ -		$ -

No.	Itm Master #	Work Item	Description 2	Unit	Unit Price	Estimated Quantity	Estimated Cost	Installed Quantity	Installed Cost
568	C-TST-00001	Pressure Testing	Low Pressure Air	EA		3.0	$ -		$ -
570	C-TST-00008	CCTV Testing	With or Without PACP Assessment	LF		627.0	$ -		$ -
571	C-TST-00009	Deformation Testing	N/A	LF		627.0	$ -		$ -
573	C-HRLY-00001	Hourly Labor	Superintendent	HR		8.0	$ -		$ -
574	C-HRLY-00002		Foreman	HR		8.0	$ -		$ -
575	C-HRLY-00003		Operator	HR		16.0	$ -		$ -
576	C-HRLY-00004		Pipe Layer	HR		8.0	$ -		$ -
577	C-HRLY-00005		Laborer	HR		24.0	$ -		$ -
578	C-HRLY-00006		Dump Truck Driver	HR		8.0	$ -		$ -
582	C-HRLY-00010	Hourly Equipment	17,000 # Class Excavator	HR		4.0	$ -		$ -
589	C-HRLY-00017		Dump Truck (Tandem Rear Axle)	HR		8.0	$ -		$ -
590	C-HRLY-00018		Hydro Excavator	HR		8.0	$ -		$ -
591	C-HRLY-00021		Utility Truck Fully Equipped with Hand Tools, Air Tools, Cutting Tools, Mudhog Pump, Generator, Air Compressor, Mechanical Tamp	HR		8.0	$ -		$ -
							$ -		$ -

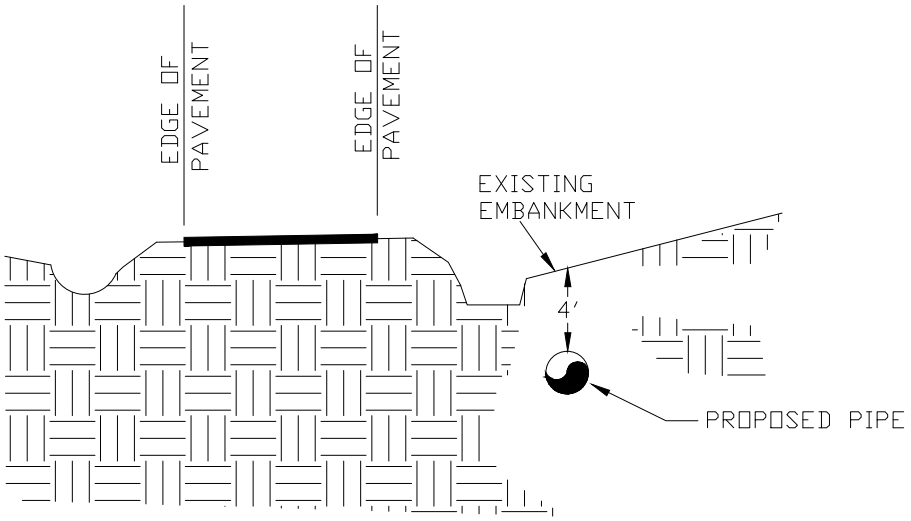
Please Pay This Amount: **$0.00**

Drawings

WHERE GROUND ELEVATION IS ABOVE ROAD ELEVATION

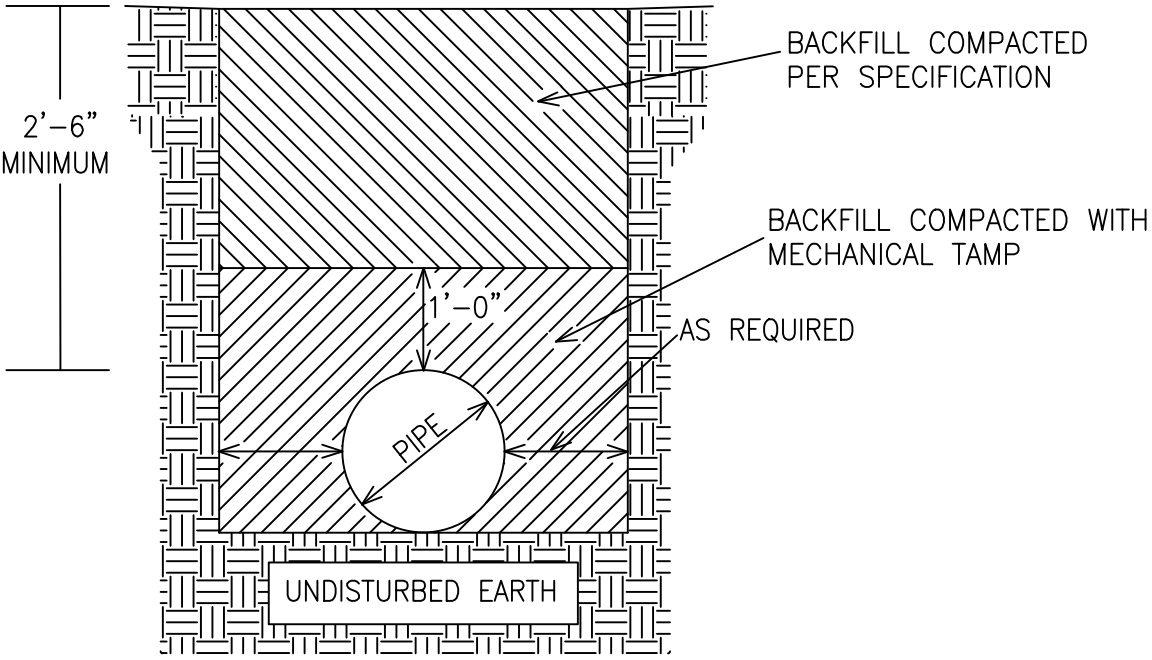


WHERE GROUND ELEVATION IS BELOW ROAD ELEVATION

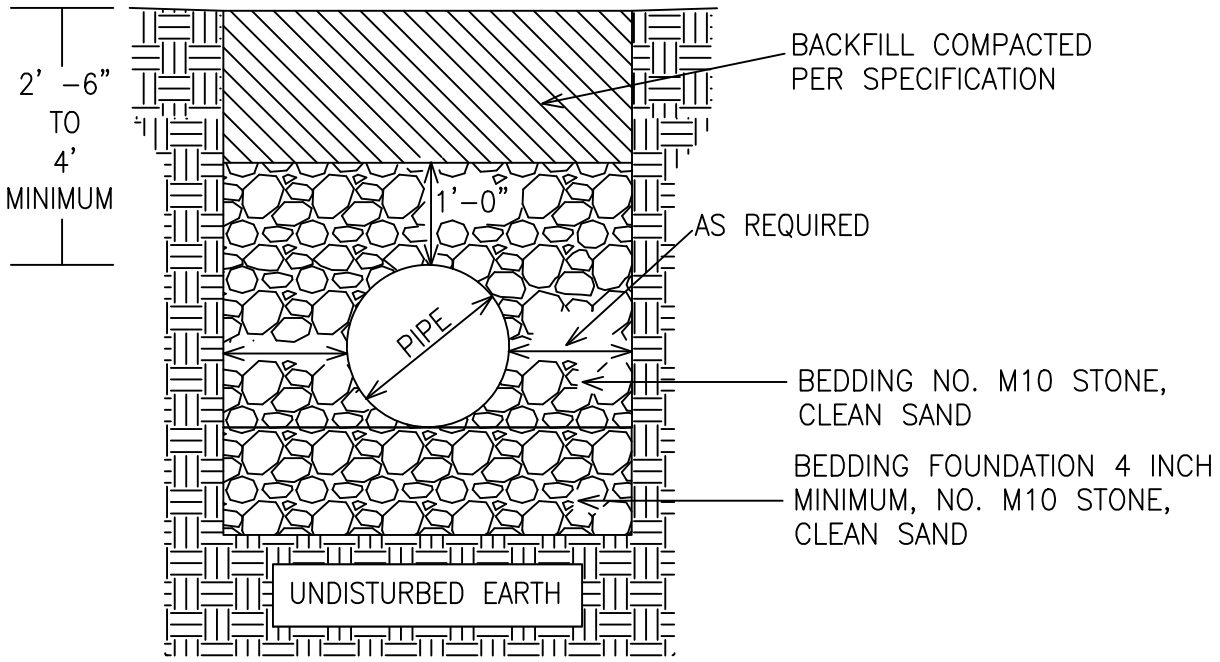


NOTE: UNLESS OTHERWISE INDICATED, MINIMUM SOIL COVER ABOVE PIPE IS 4 FEET.

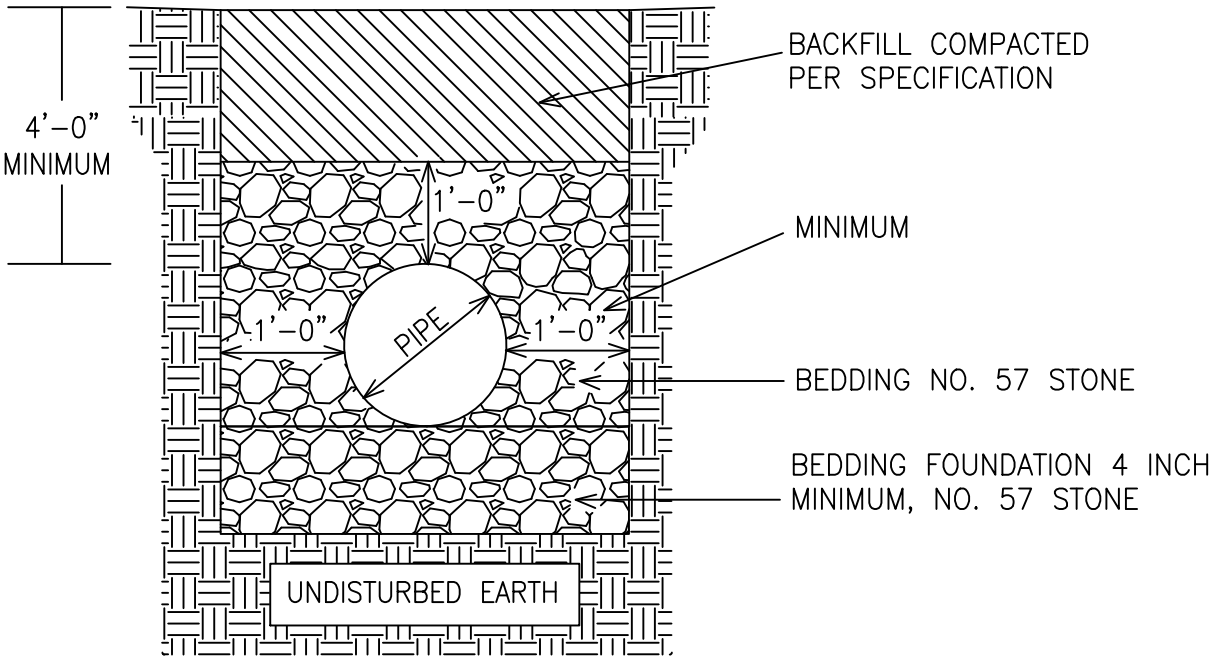
CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	PIPE DEPTH AT EDGE OF PAVEMENT
DRAWN BY:	WWB	



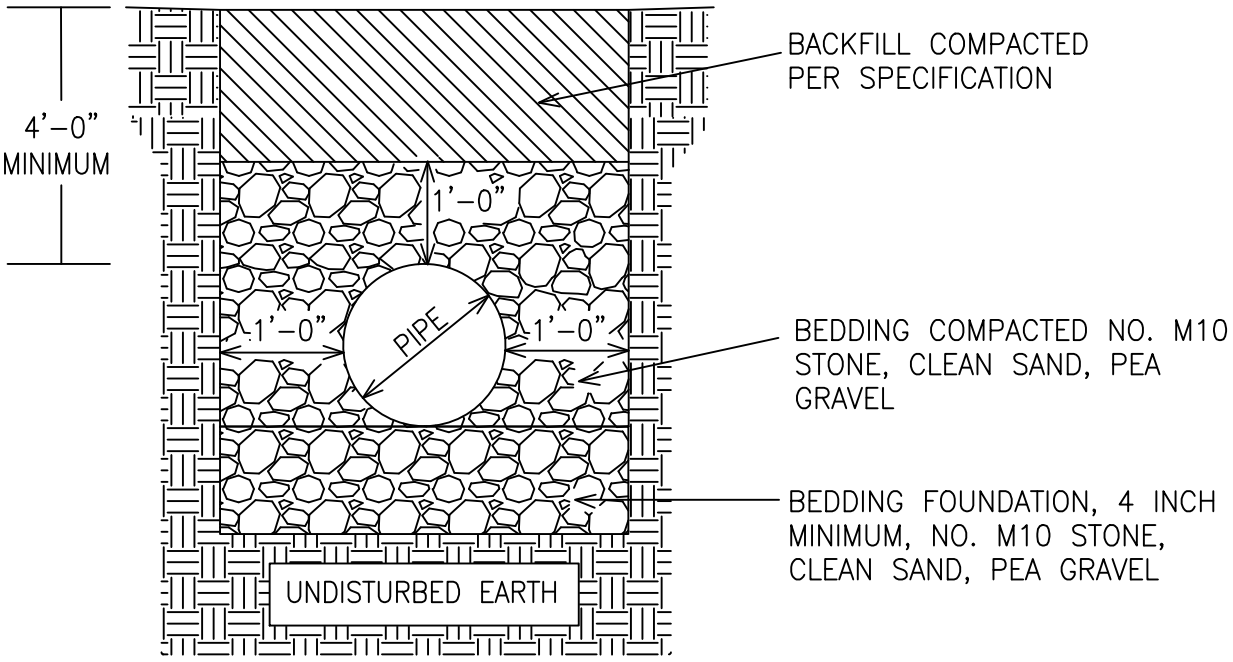
CLAYTON COUNTY WATER AUTHORITY		
DATE:	16 MAY 2013	DETAIL TITLE:
SCALE:	N.T.S.	PIPE INSTALLATION UP TO 1" COPPER
DRAWN BY:	WWB	



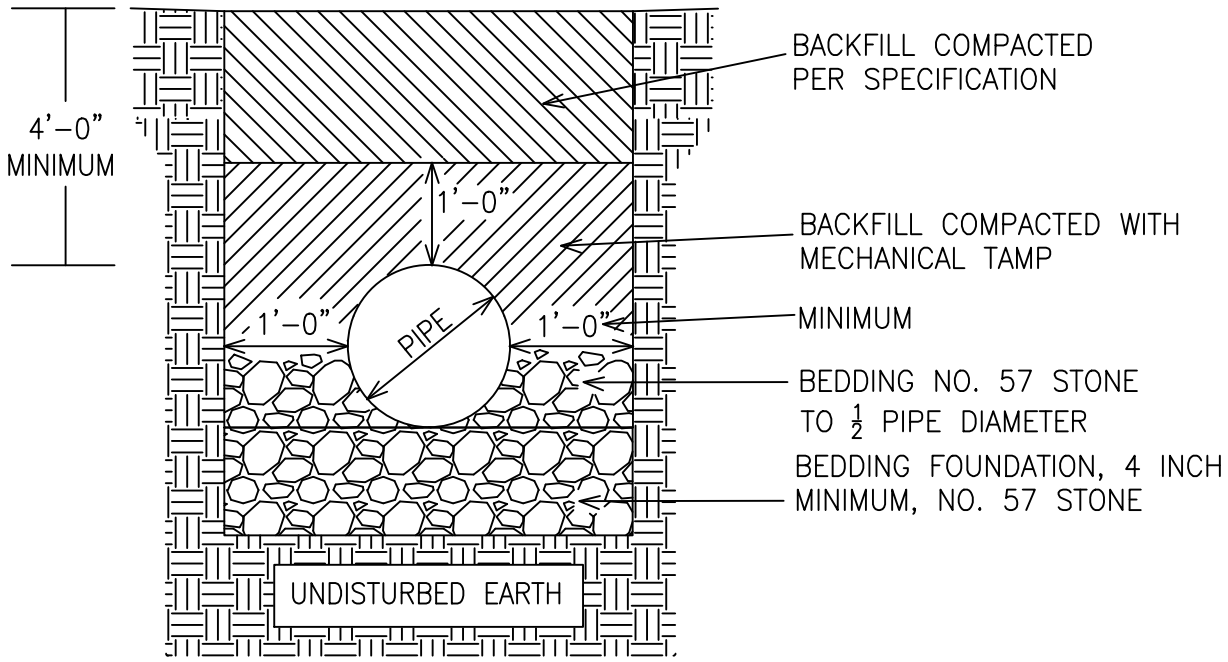
CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	PIPE INSTALLATION 1.5" OR 2" COPPER
DRAWN BY:	WWB	



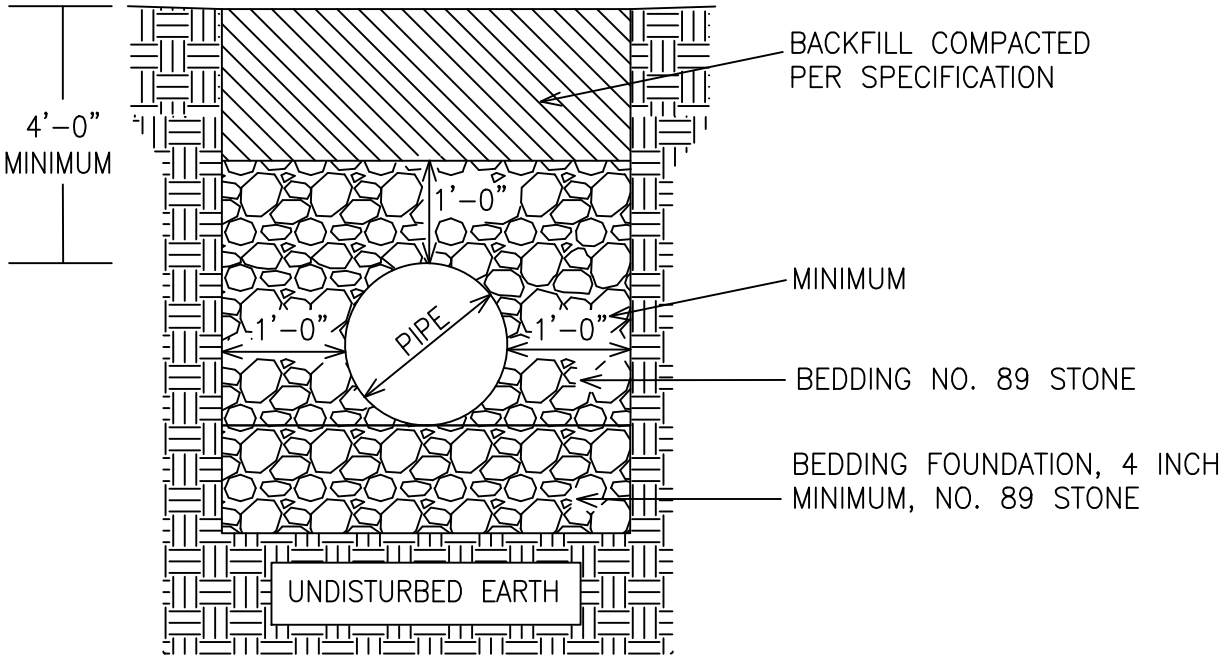
CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	PIPE INSTALLATION ON GRADE GRAVITY FLOW PVC, HDPE
DRAWN BY:	WWB	



CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	PIPE INSTALLATION PRESSURIZED PVC
DRAWN BY:	WWB	

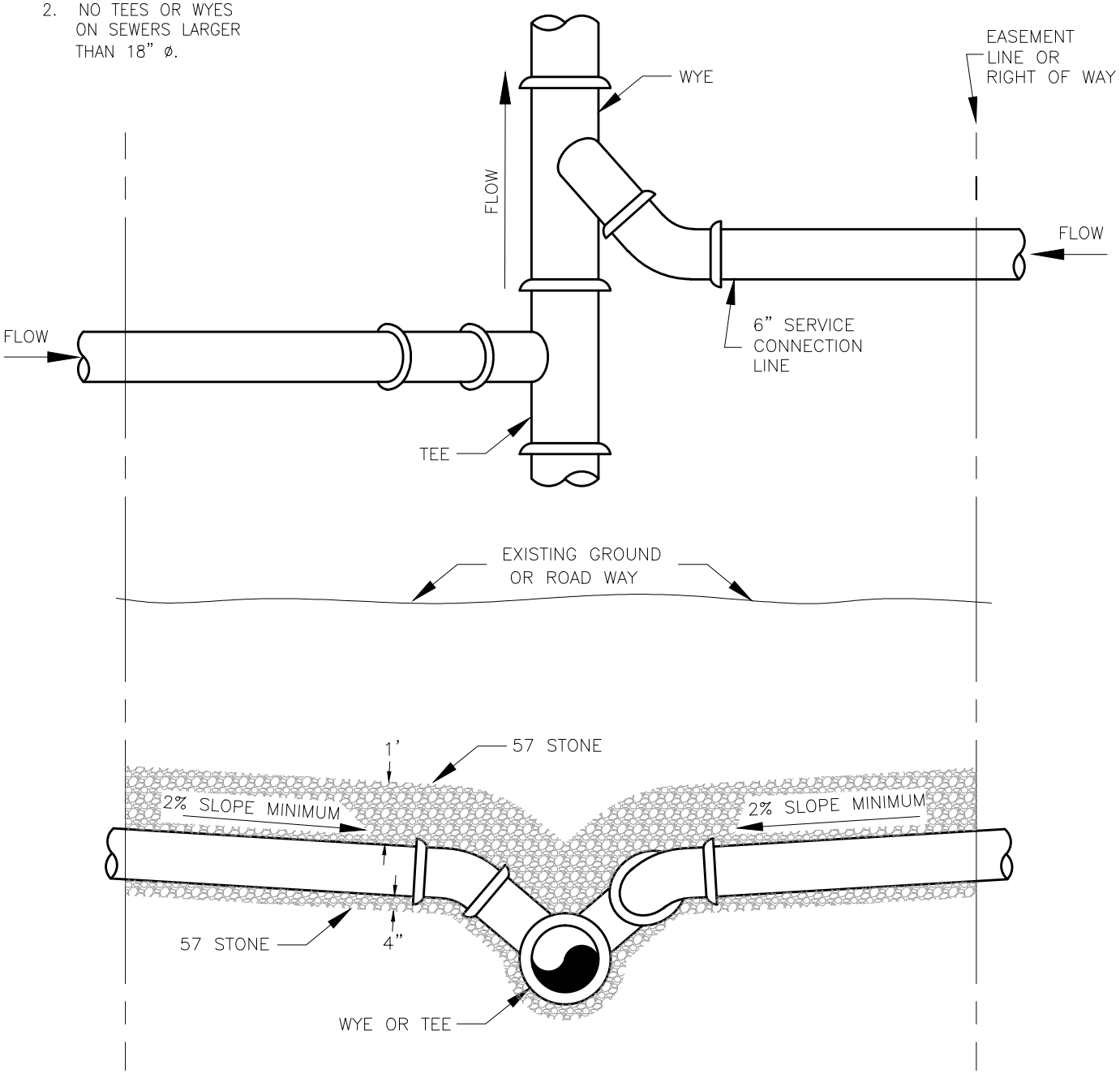


CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	PIPE INSTALLATION ON GRADE DI, RC, CM, STEEL CASING
DRAWN BY:	WWB	

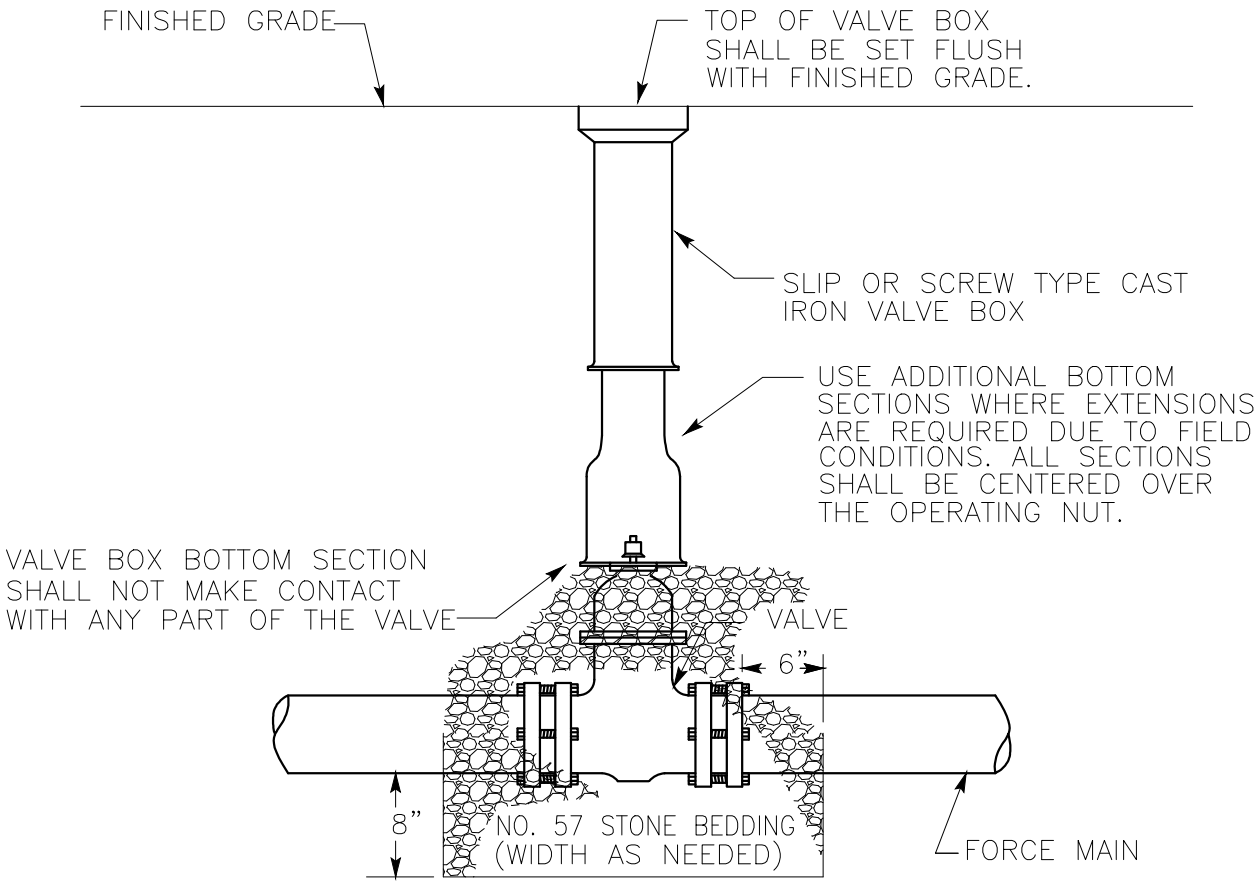


CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	PIPE INSTALLATION ON GRADE FRPMP
DRAWN BY:	WWB	

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

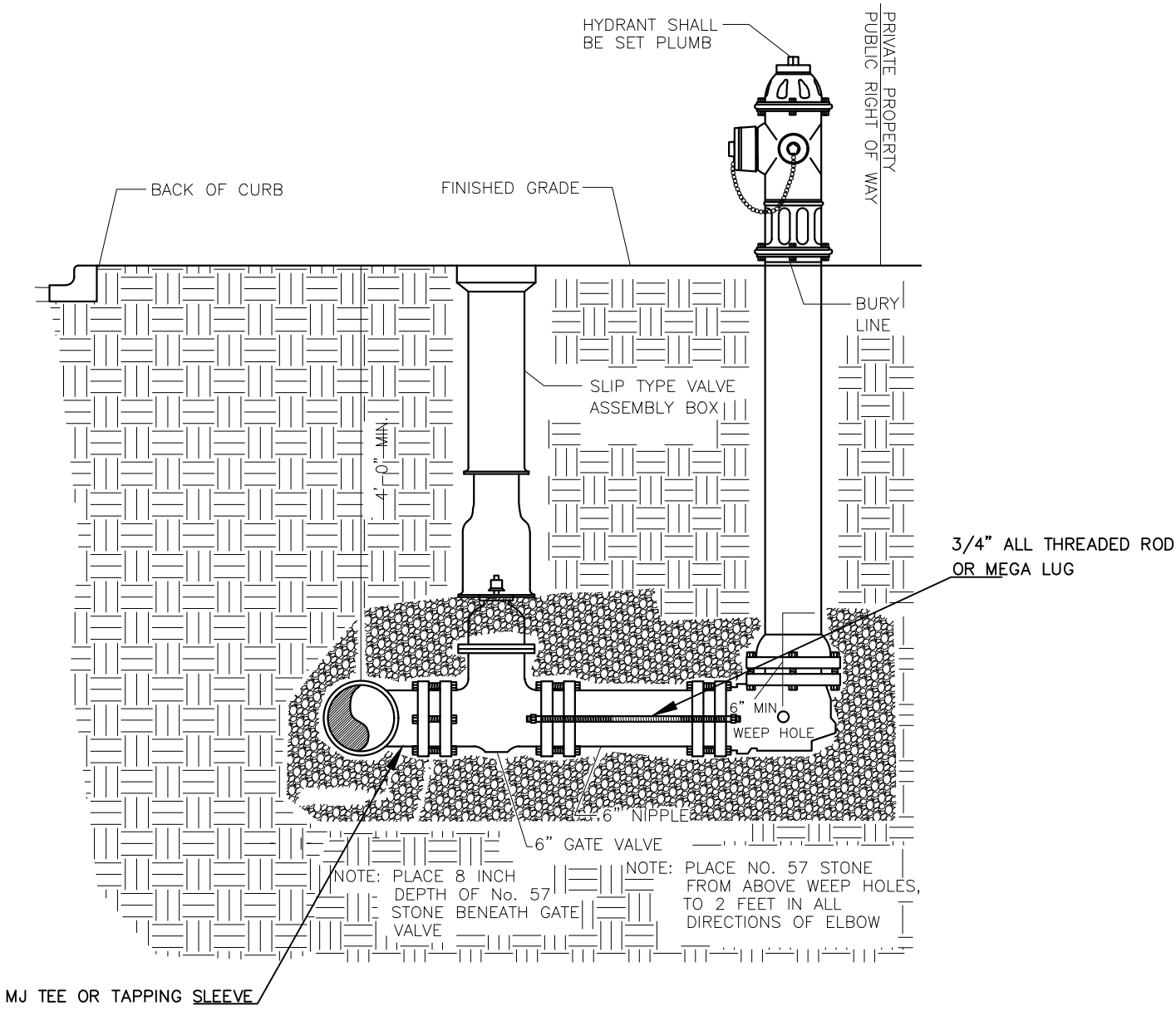


CLAYTON COUNTY WATER AUTHORITY		
DATE:	06 DECEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	LATERAL CONNECTION
DRAWN BY:	WWB	

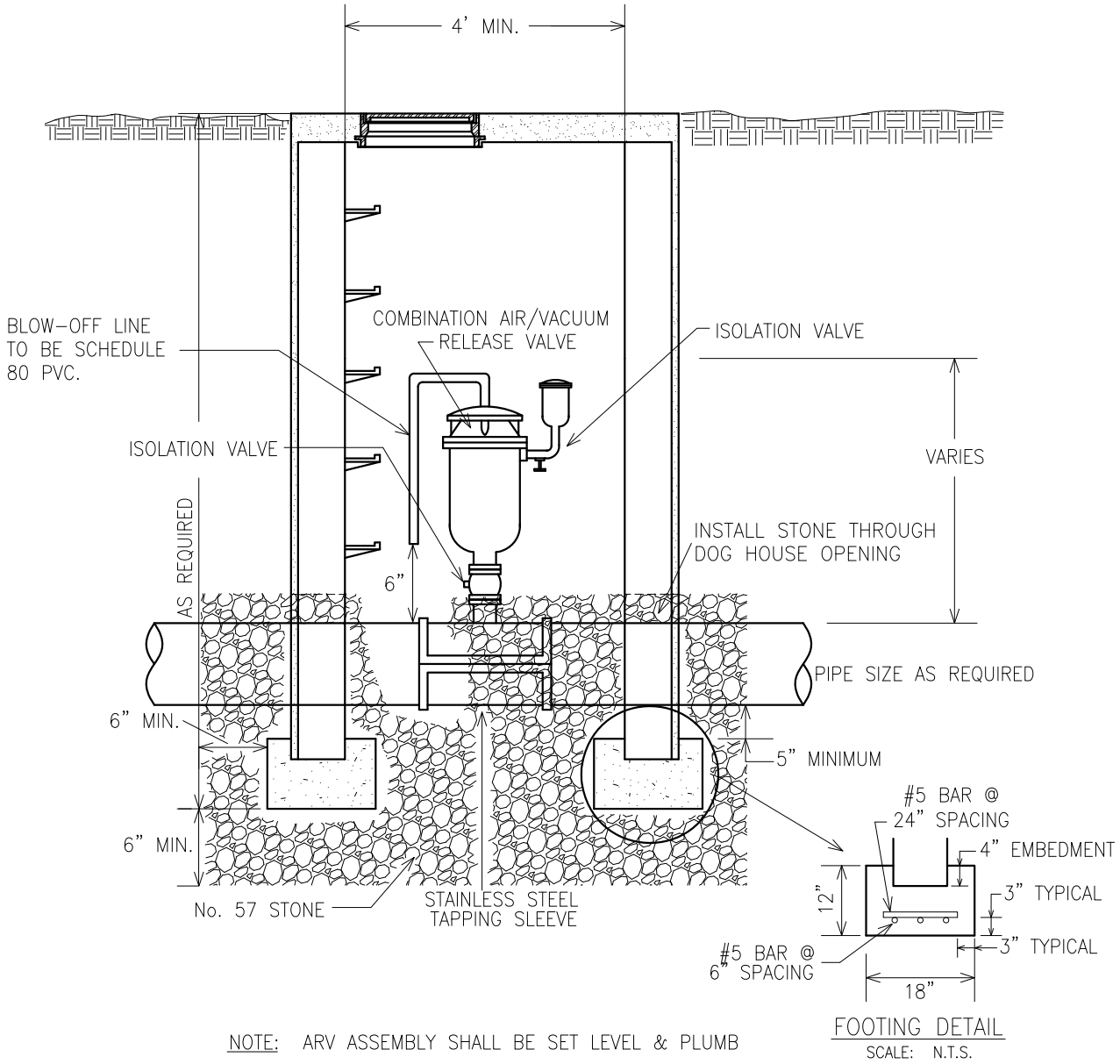


NOTE: VALVE BOX SHALL NOT BE SET IN A DEPRESSED AREA.

CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	VALVE BOX
DRAWN BY:	WWB	



CLAYTON COUNTY WATER AUTHORITY		
DATE:	03 JULY 2024	DETAIL TITLE:
SCALE:	N.T.S.	FIRE HYDRANT
DRAWN BY:	JRM	

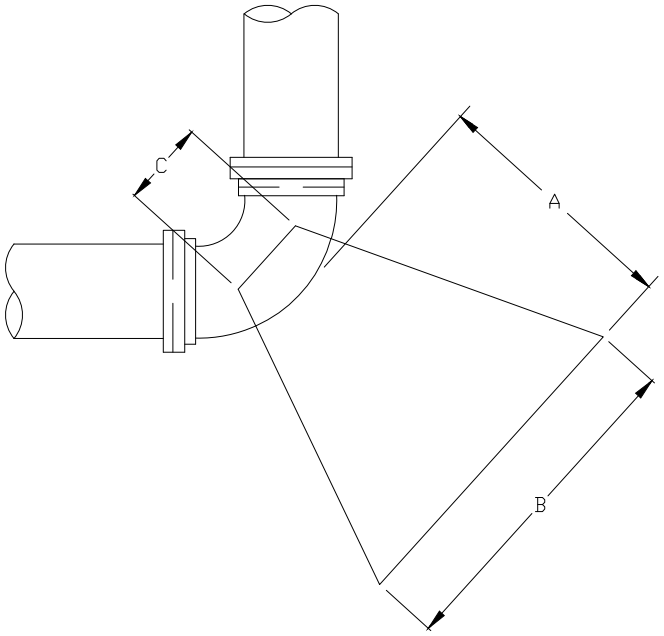


FOOTING DETAIL
SCALE: N.T.S.

NOTE: ARV ASSEMBLY SHALL BE SET LEVEL & PLUMB

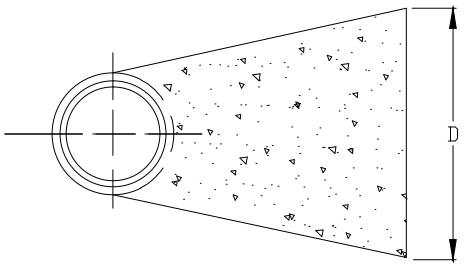
SANITARY SEWER APPLICATION MANHOLE TO BE LINED WITH HDPE.

CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	AIR/VACUUM RELEASE
DRAWN BY:	WWB	



MINIMUM
DIMENSIONS FOR CONCRETE BLOCKING

BEND	PIPE SIZE	A	B	C	D
11 1/4°	6"	1.0'	1.0'	7"	1.0'
	8"	1.0'	1.25'	7"	1.0'
	12"	1.0'	2.0'	11"	2.0'
	16"	2.0'	3.0'	15"	2.0'
	20"	2.0'	3.0'	19"	3.0'
	24"	3.0'	4.0'	22"	3.0'
22 1/2°	6"	1.0'	1.5'	7"	1.0'
	8"	1.0'	2.0'	7"	2.0'
	12"	2.0'	3.0'	11"	2.0'
	16"	2.0'	4.0'	15"	3.0'
	20"	3.0'	5.0'	19"	3.0'
	24"	4.0'	6.0'	22"	4.0'
45°	6"	1.5'	2.0'	7"	1.5'
	8"	2.0'	3.0'	7"	2.0'
	12"	2.0'	4.0'	11"	3.0'
	16"	3.0'	5.0'	15"	4.0'
	20"	4.0'	6.0'	19"	5.0'
	24"	5.0'	8.0'	22"	6.0'
90°	6"	1.5'	2.5'	7"	2.0'
	8"	2.0'	3.0'	7"	3.0'
	12"	4.0'	6.0'	11"	4.0'
	16"	4.0'	7.0'	15"	5.0'
	20"	8.0'	8.0'	19"	7.0'
	24"	6.0'	10.0'	22"	8.0'
TEES AND PLUGS	6"	1.5'	2.0'	7"	2.0'
	8"	2.0'	3.0'	7"	2.0'
	12"	2.0'	4.0'	11"	4.0'
	16"	3.0'	5.0'	15"	5.0'
	20"	4.0'	7.0'	19"	6.0'
	24"	5.0'	8.0'	22"	7.0'

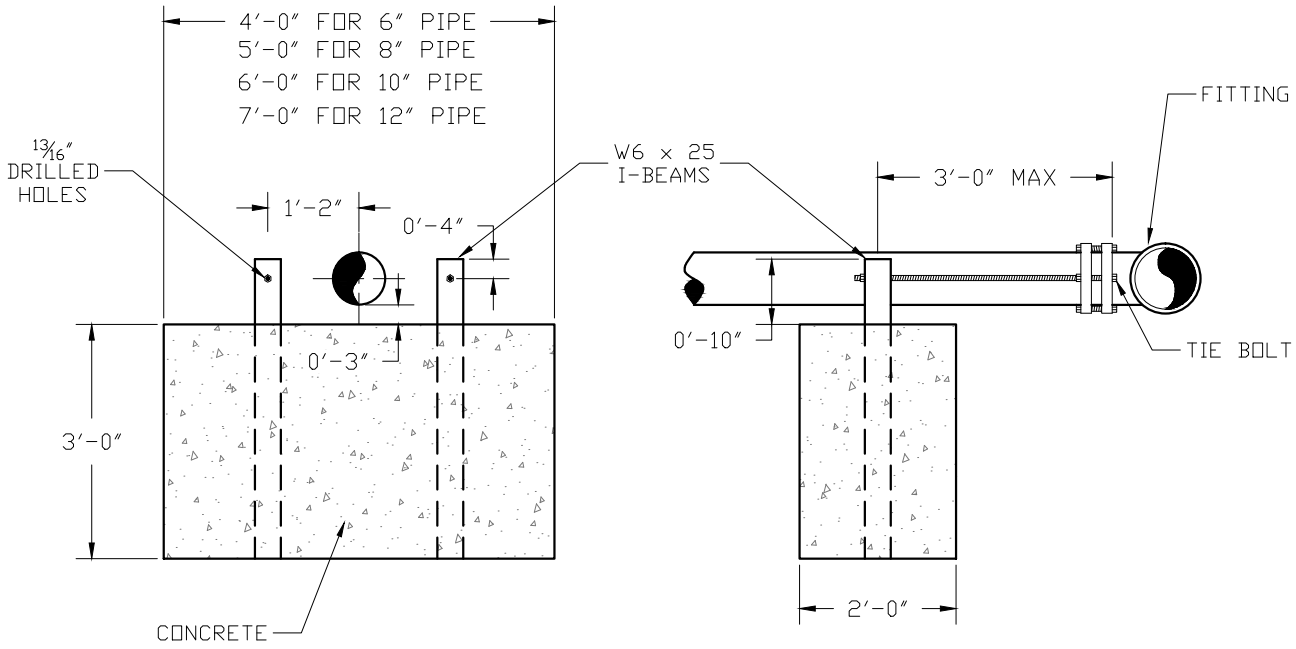


SECTION

NOTES:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
2. THRUST BLOCK SHALL BE POURED AGAINST UNDISTURBED SOIL.
3. BOLTS/NUTS SHALL BE PROTECTED FROM CONCRETE COVERAGE.

CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	THRUST RESTRAINT CONCRETE BLOCK
DRAWN BY:	WWB	



1. PIPE SIZES 6" AND 8" REQUIRE 2 RODS. PIPE SIZES 10" AND 12" REQUIRE 4 RODS.
2. ¾" RODS AND NUTS 316 STAINLESS STEEL.
3. RODS TO HAVE VISIBLE THREADS BEYOND NUT.
4. I–BEAMS, EXPOSED TO SOIL, SHALL BE CLEANED AND COATED WITH ROYSTON ROSKOTE, CARBOLINE BITUMASTIC 300M, OR APPROVED EQUAL.
5. CONCRETE MUST BE POURED AGAINST UNDISTURBED EARTH.

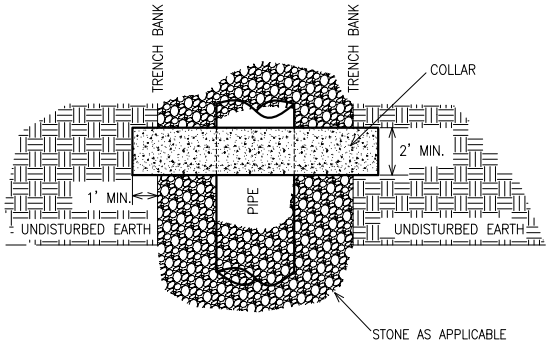
CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	THRUST RESTRAINT CONCRETE TIE-BACK
DRAWN BY:	WWB	

CLAYTON COUNTY WATER AUTHORITY

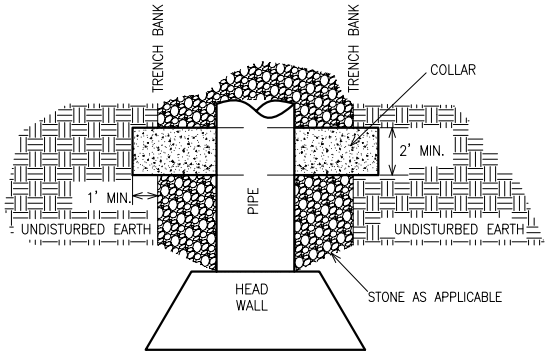
DETAIL TITLE:

PIPE COLLAR

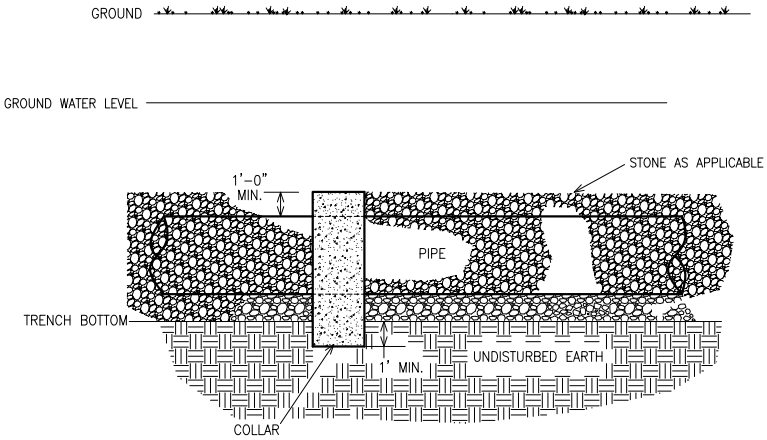
DATE:	SCALE:	DRAWN BY:
09 SEPTEMBER 2016	N.T.S.	WWB



PLAN VIEW

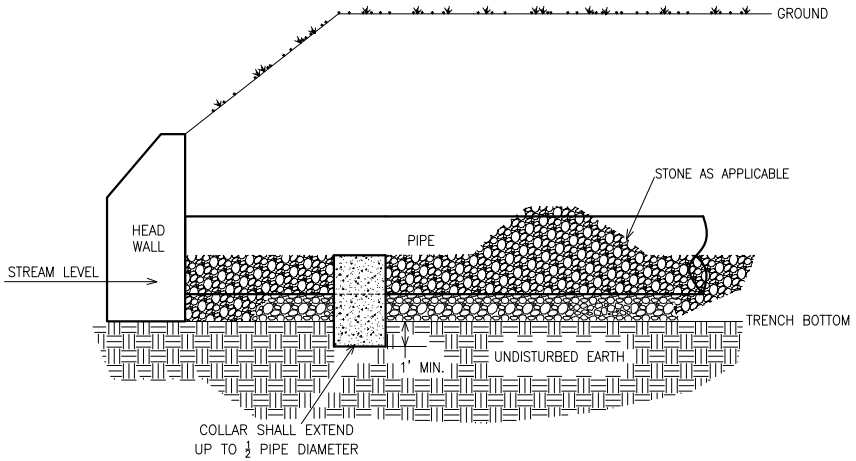


PLAN VIEW



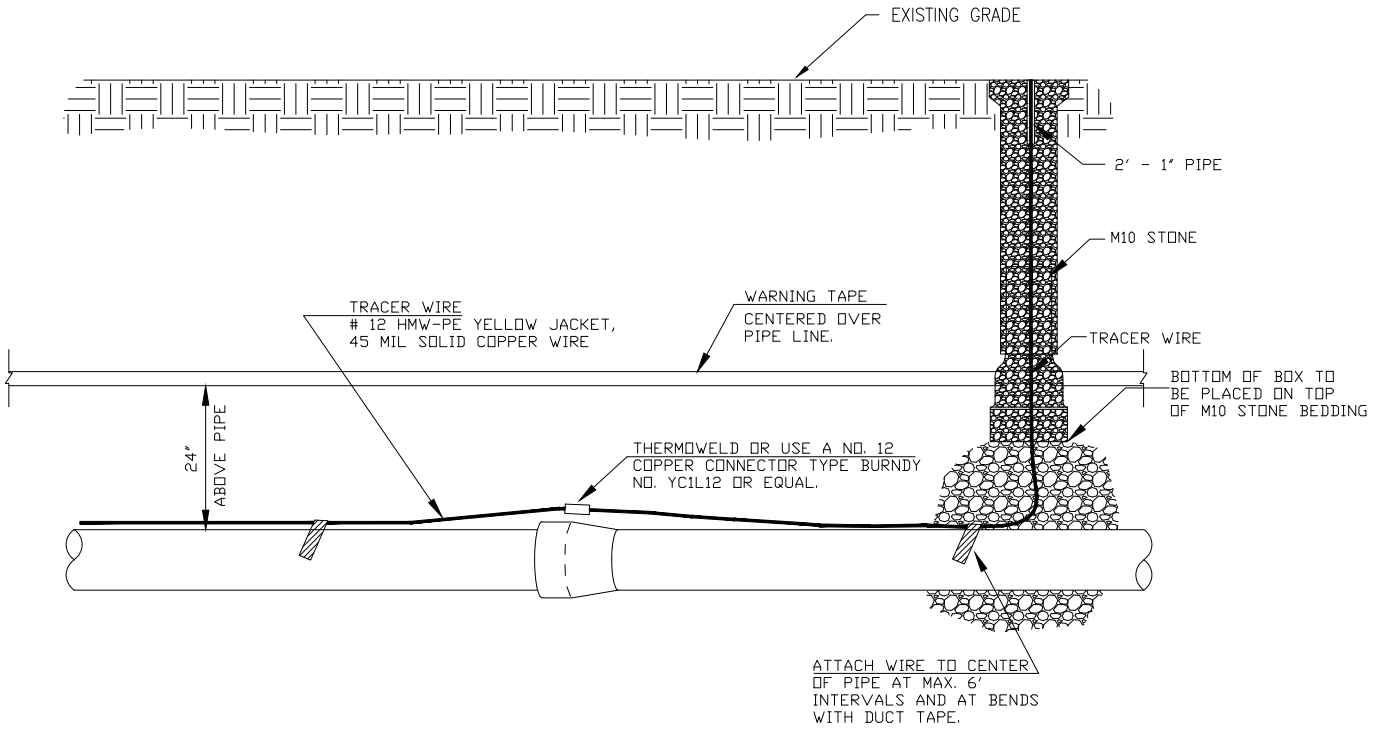
SIDE VIEW

(GROUND WATER CONDITION)

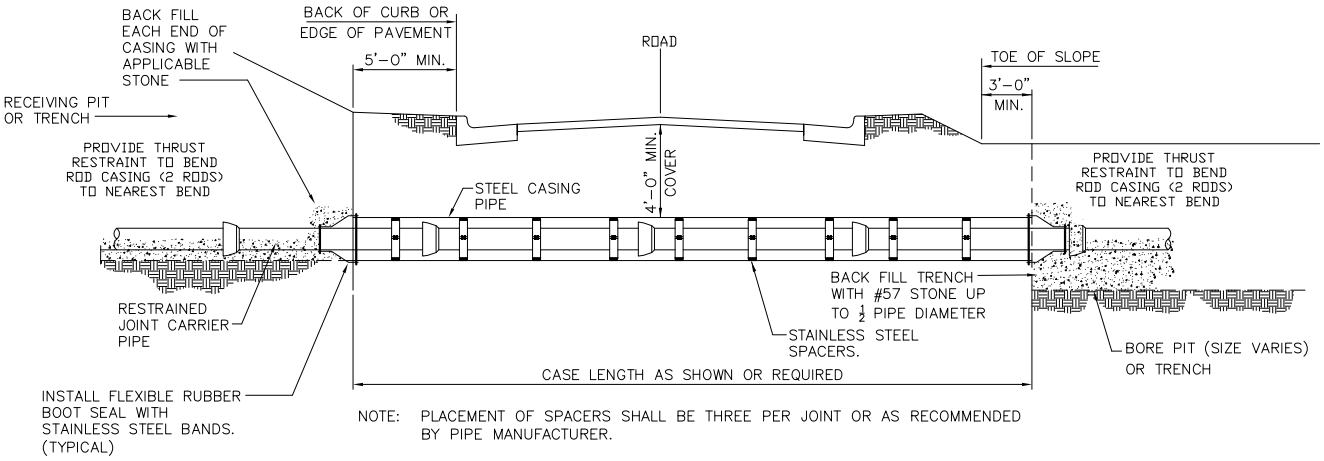


SIDE VIEW

(CREEK CONDITION)



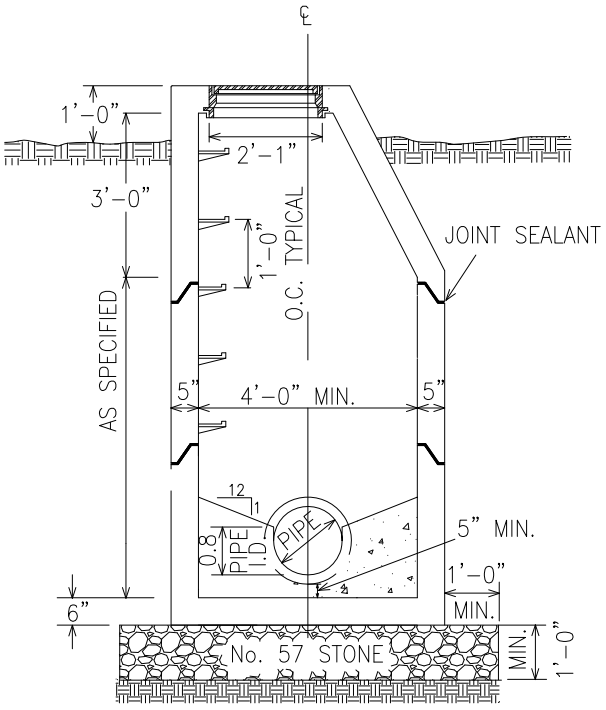
CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	PIPE DETECTION INSTALLATION
DRAWN BY:	WWB	



NOTE: PLACEMENT OF SPACERS SHALL BE THREE PER JOINT OR AS RECOMMENDED BY PIPE MANUFACTURER.

CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	STEEL CASING
DRAWN BY:	WWB	

J:\Cad\Specifications & Details\Details\Inspectors\Details\05162013.dwg, 9/14/2016 8:13:14 AM

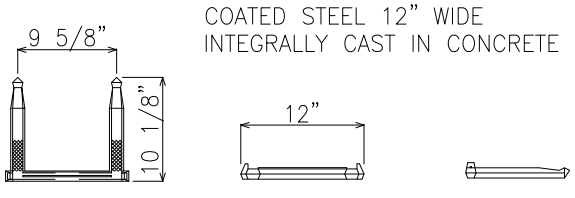


NOTES:

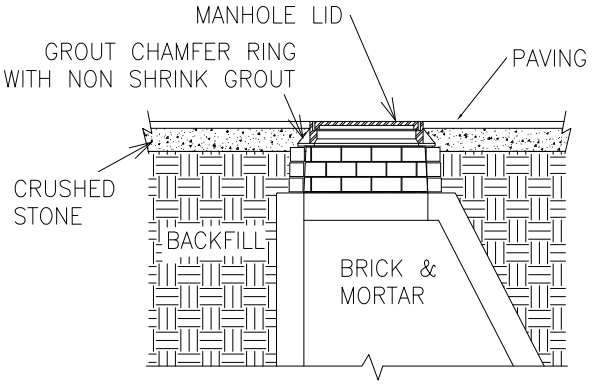
1. SHELF AND INVERT MAY BE CAST-IN OR BUILT-IN-PLACE AND SHALL HAVE SMOOTH FINISH.

2. WHEN BRICK IS USED AS A FILLER, PROVIDE MINIMUM 1/2 INCH GROUT OVER BRICK.

MANHOLE SECTION

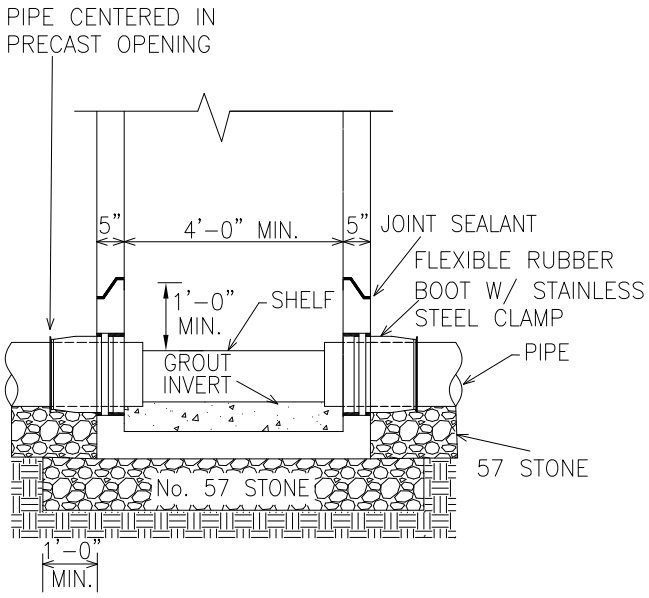


MANHOLE STEP DETAIL
SCALE: N.T.S.



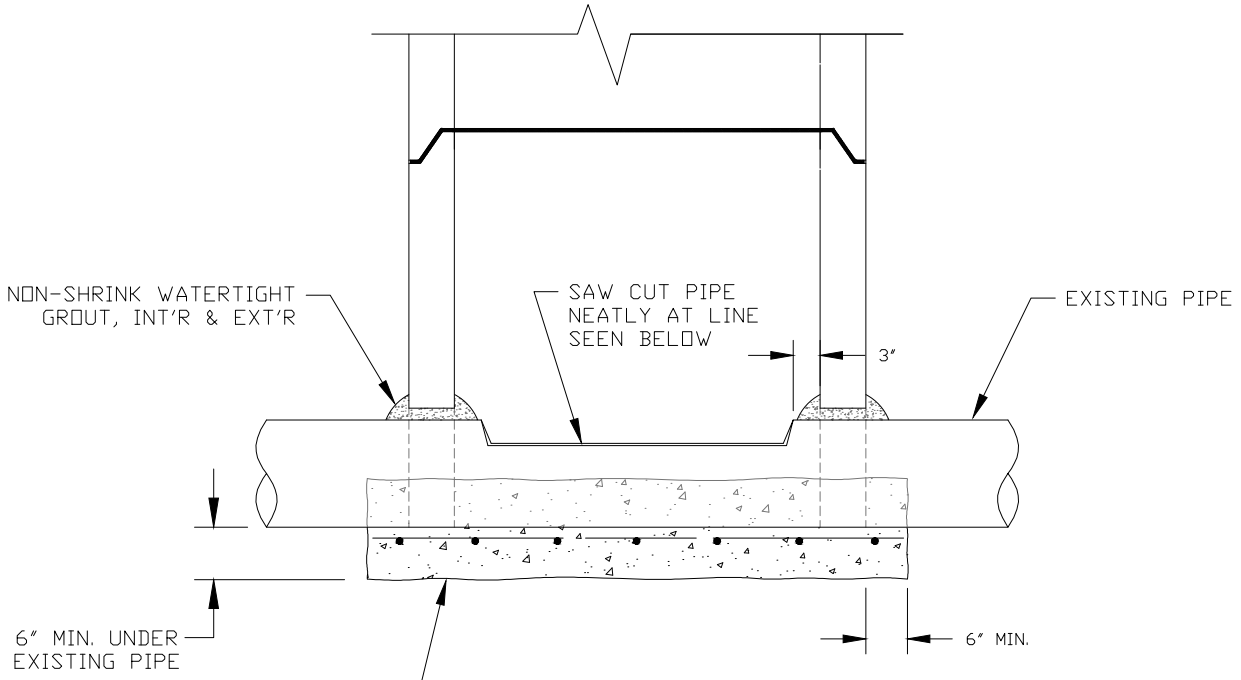
NOTES: 1. BRICKS SHALL BE STACKED NO MORE THAN FIVE COARSES.

TYPICAL MANHOLE IN PAVEMENT DETAIL

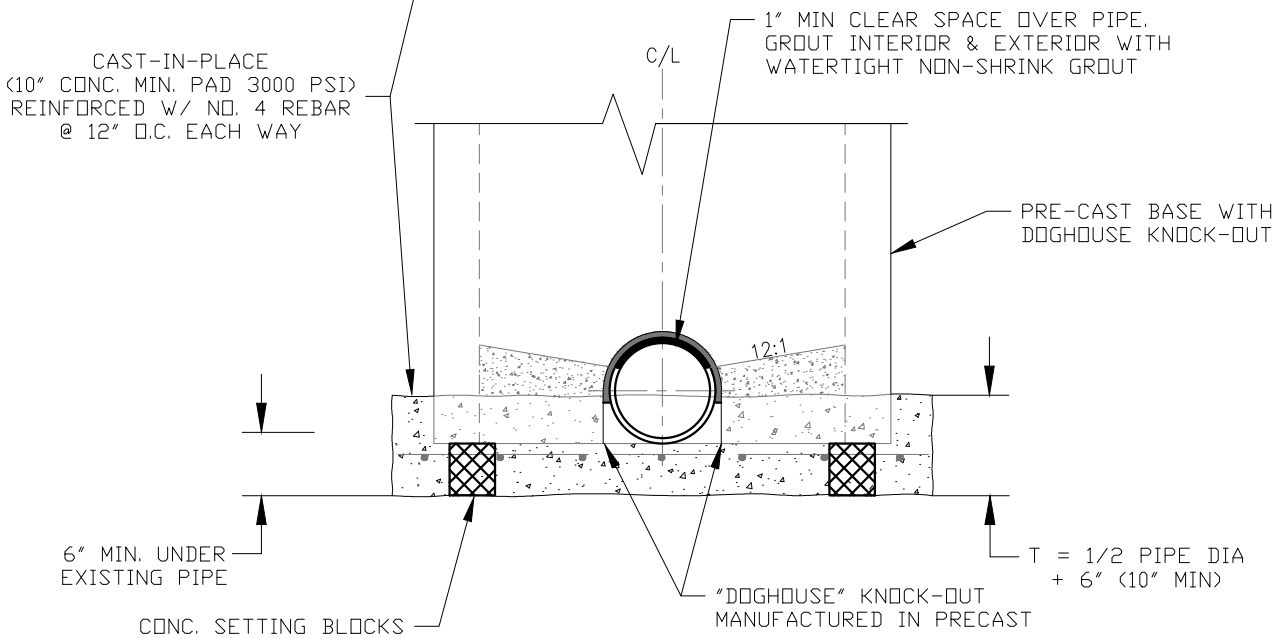


MANHOLE SECTION

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

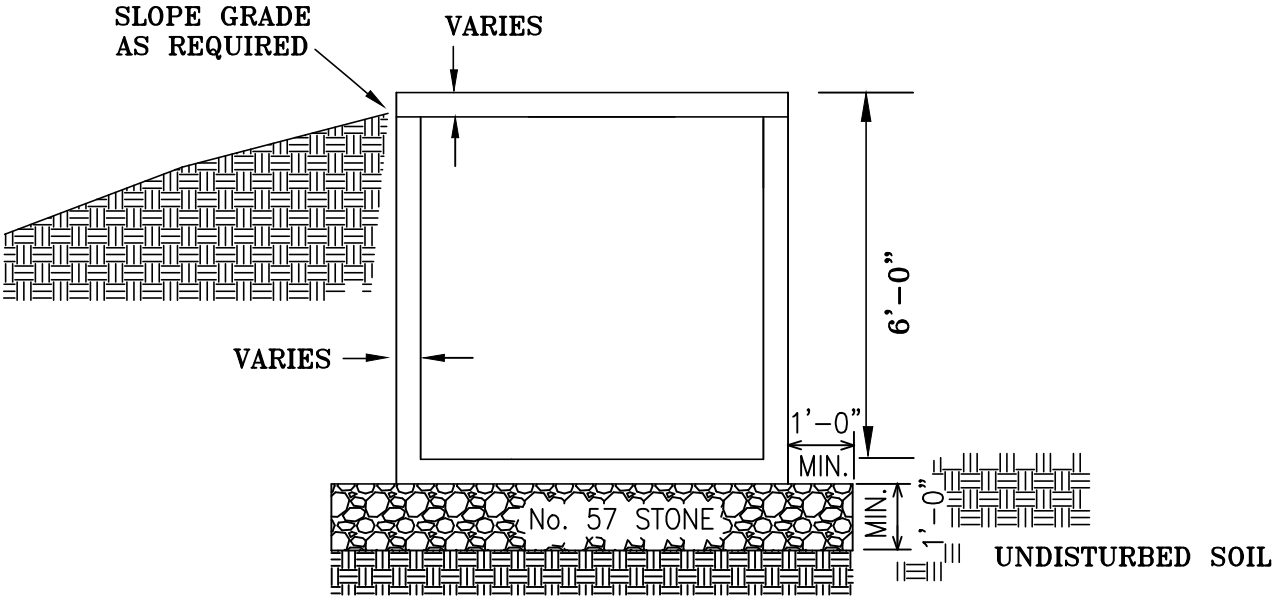


SECTION

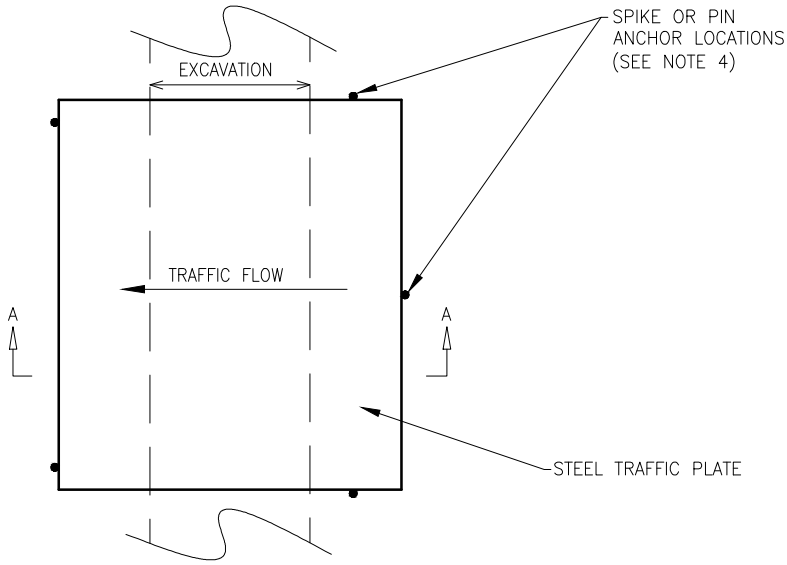


ROTATED SECTION

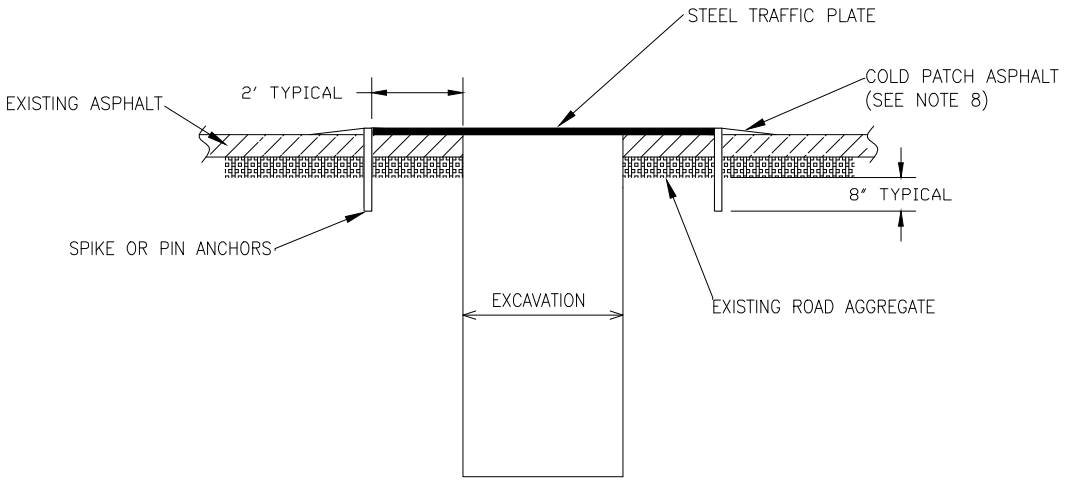
CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	DOG HOUSE MANHOLE SECTIONS
DRAWN BY:	WWB	



CLAYTON COUNTY WATER AUTHORITY		
DATE:	16 MAY 2013	DETAIL TITLE:
SCALE:	N.T.S.	PRECAST BOX / VAULT
DRAWN BY:	WWB	



PLAN VIEW

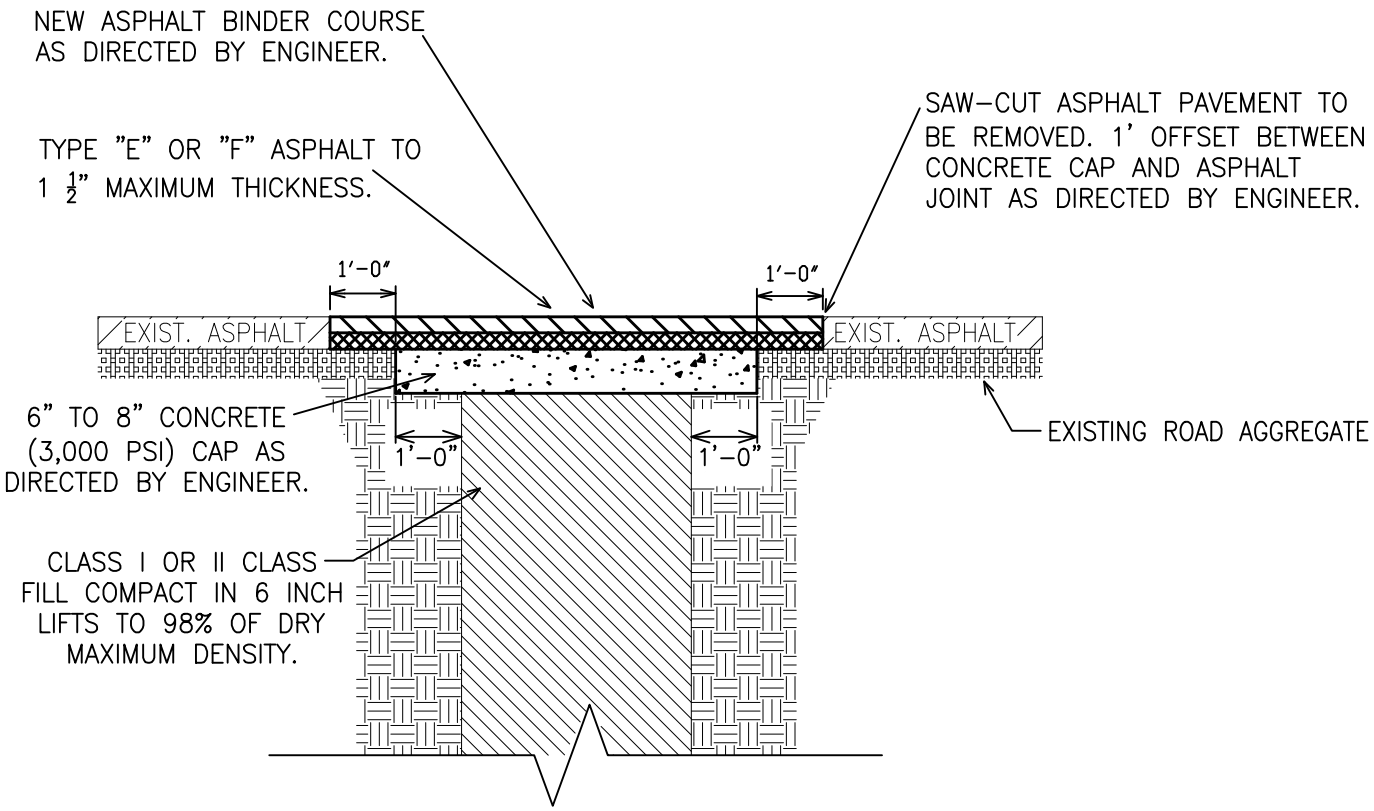


SECTION A-A

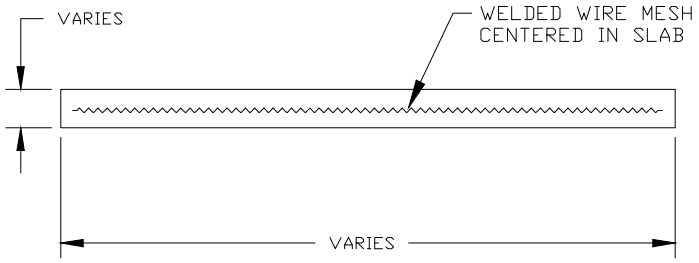
NOTES

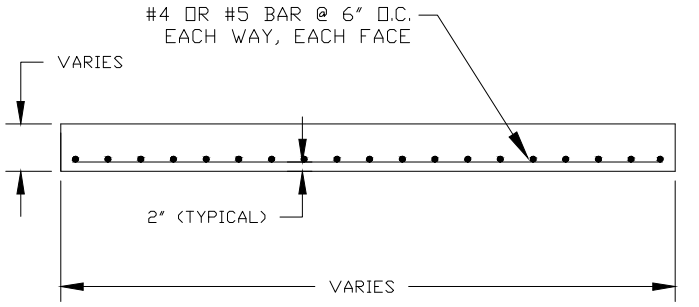
1. TRAFFIC BASED ON H20-44 (SINGLE TIRE/PLATE). HAVING A UNIFORM LOAD OF 640Lb. PER LINEAL FOOT ON LOAD LANE.
2. PLATE ARE TO BE UNIFORMLY SUPPORTED AND CENTERED OVER TRENCH.
3. TRENCH WALLS UNDER THE PLATES SHALL BE UNIFORMLY SUPPORTED FROM TOP TO BOTTOM.
4. PLATES SHOULD BE ANCHORED TO PREVENT LATERAL MOVEMENT.
5. SUPPORTING SURFACE ON EACH SIDE OF THE TRENCH SHALL BE SMOOTH AND HARD (CONCRETE, ASPHALT SURFACES OR EQUAL).
6. STEEL TRAFFIC PLATES SHALL BE A MINIMUM OF ONE INCH THICK.
7. TACK WELD PLATES TOGETHER AS NECESSARY TO PREVENT MOVEMENT BETWEEN ADJACENT PLATES.
8. USE COLD PATCH ASPHALT ALONG ALL EDGES OF PLATES TO ENSURE SMOOTH TRANSISTION FOR TRAFFIC.

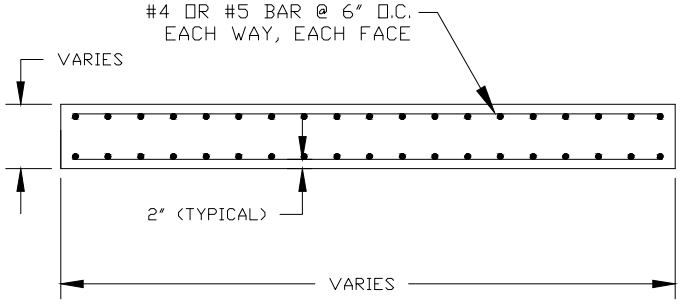
CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	STEEL TRAFFIC PLATE
DRAWN BY:	WWB	

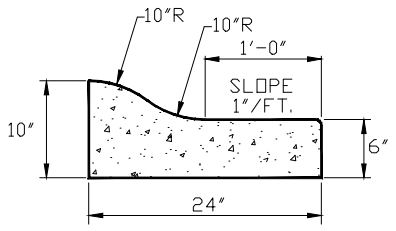


CLAYTON COUNTY WATER AUTHORITY		
DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	ASPHALT REPLACEMENT AT EXCAVATION
DRAWN BY:	WWB	

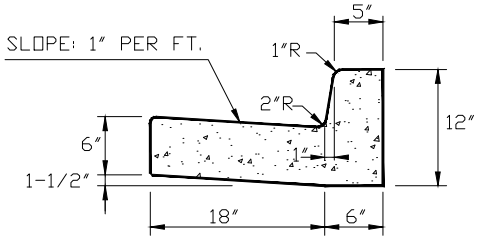








ROLLED TYPE CURB AND GUTTER



24" VERTICAL CURB AND GUTTER

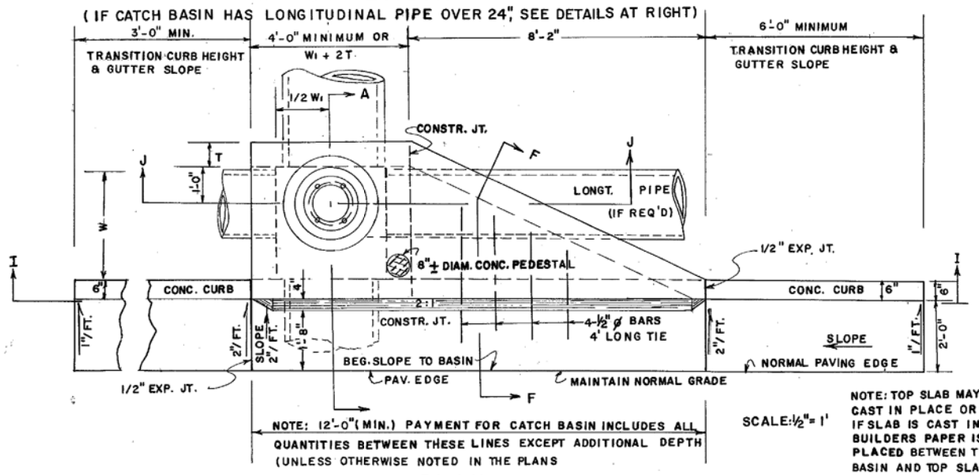
CLAYTON COUNTY WATER AUTHORITY		
DATE:	12 AUGUST 2013	DETAIL TITLE:
SCALE:	N.T.S.	SLAB ON GRADE
DRAWN BY:	WWB	

AF 21868

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

CATCH BASIN

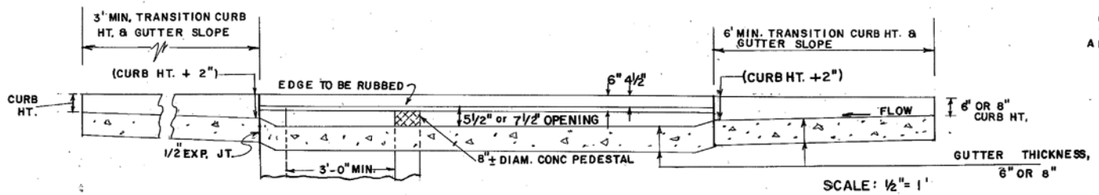
(IF CATCH BASIN HAS LONGITUDINAL PIPE OVER 24", SEE DETAILS AT RIGHT)



PLAN

SCALE: 1/2" = 1'

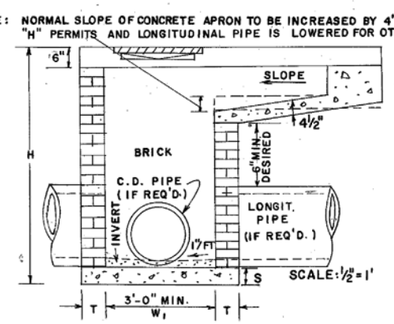
NOTE: TOP SLAB MAY BE CAST IN PLACE OR PRECAST, IF SLAB IS CAST IN PLACE, BUILDERS PAPER IS TO BE PLACED BETWEEN THE CATCH BASIN AND TOP SLAB.



SCALE: 1/2" = 1'

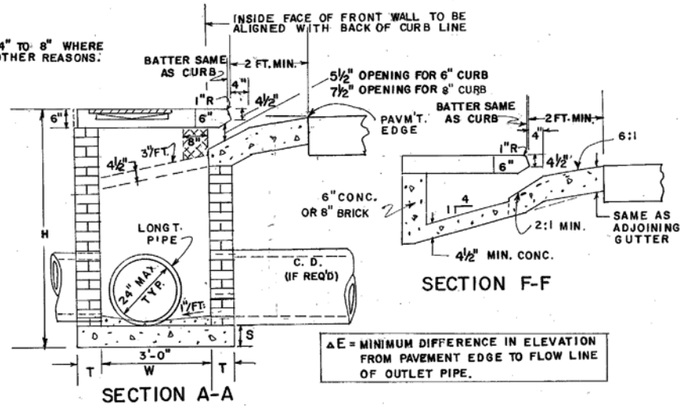
SECTION I-I

NOTE: NORMAL SLOPE OF CONCRETE APRON TO BE INCREASED BY 4" TO 8" WHERE "H" PERMITS AND LONGITUDINAL PIPE IS LOWERED FOR OTHER REASONS.



SCALE: 1/2" = 1'

SECTION J-J

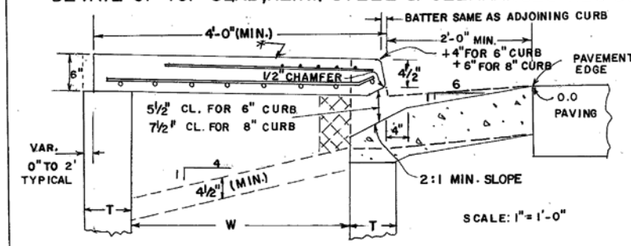


SECTION A-A

SECTION F-F

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

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

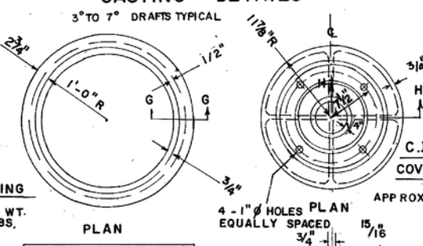


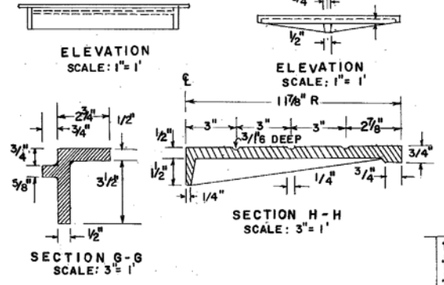
SCALE: 1" = 1'-0"

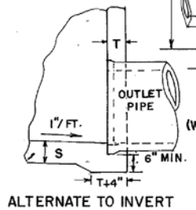
* SLOPE TOP TO MATCH ADJACENT SURFACES

CASTING DETAILS

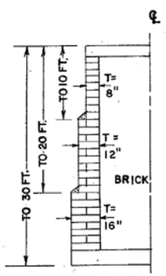
3° TO 7° DRAFTS TYPICAL







ALTERNATE TO INVERT



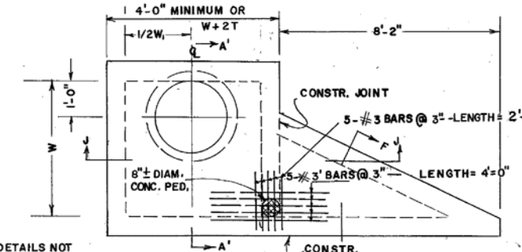
DEPTH LIMITS FOR INCREASING "T"

TYPICAL MIN. DIMENSIONS			
PIPE DIA.	H (MIN.)	W or W1	△E (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. H & MIN. △E 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, & W. DIMENSIONS DO NOT HAVE TO BE EQUAL.

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

CATCH BASIN - (WITH PROTRUDED BACK)

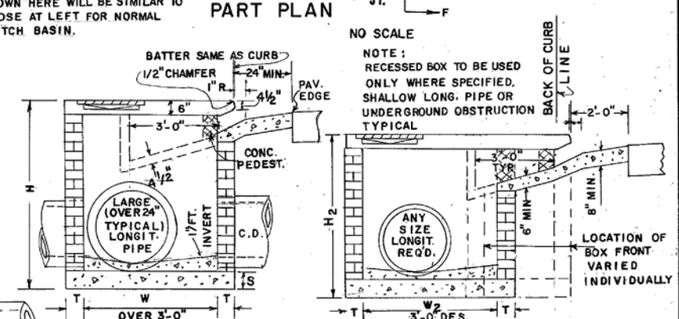


PART PLAN

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

NO SCALE

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

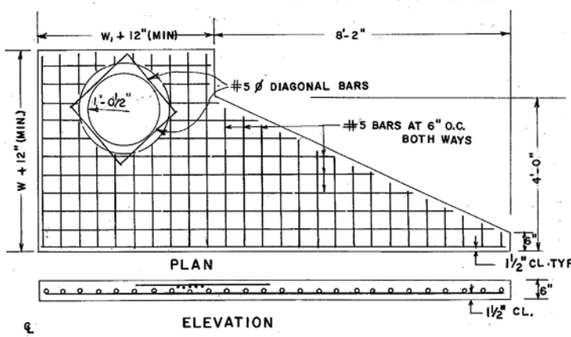


SECTION A'-A' (WITH LARGE LONGITUDINAL PIPE)

NOTE: H_2 & W_2 TO BE SHOWN IN THE PLANS

SECTION A'-A' (WITH RECESSED BOX)

DETAIL OF TOP REINFORCED CONCRETE SLAB

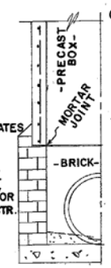


PLAN

ELEVATION

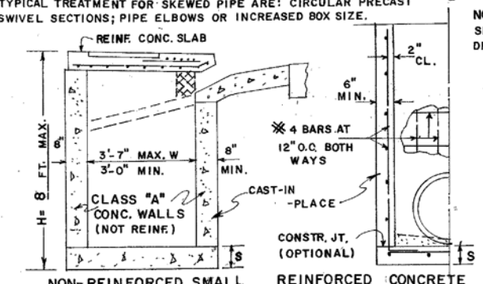
NOTE: PIPE SIZES, NUMBER, ALIGNMENT, AND INVERT SHOWN ARE ILLUSTRATIVE. SEE PLANS FOR SPECIFICS. INVERTS TO BE FORMED WITH GROUT OR CONCRETE AS DIRECTED BY THE ENGINEER OR AS SHOWN IN THE PLANS.

PRECAST BOX ON BRICK (HALF-SECTION)



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

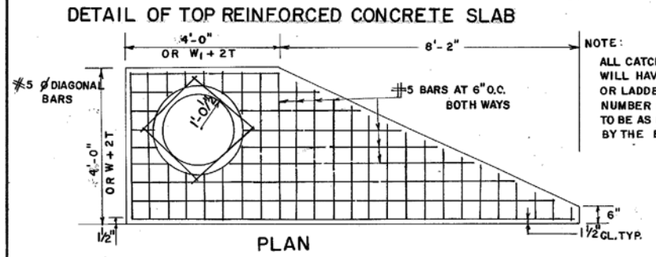
NOTE: TYPICAL TREATMENT FOR SKEWED PIPE ARE: CIRCULAR PRECAST SWIVEL SECTIONS; PIPE ELBOWS OR INCREASED BOX SIZE.



NON-REINFORCED SMALL BASIN (W1 NOT OVER 3'-7")

REINFORCED CONCRETE (HALF-SECTION)

DETAIL OF TOP REINFORCED CONCRETE SLAB

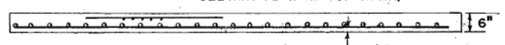


PLAN

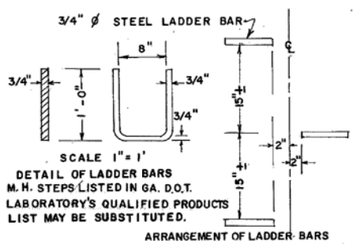
NOTE: ALL CATCH BASINS WILL HAVE STEPS OR LADDER BARS, NUMBER & LOCATION TO BE AS DIRECTED BY THE ENGINEER.

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.



ELEVATION



SCALE 1" = 1'

DETAIL OF LADDER BARS

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

ARRANGEMENT OF LADDER BARS

W OR W1 (MAX.)	BOTTOM SLAB MATERIALS	S
TO 4'-6"	NON-REINF. CONCRETE	6"
	OR BRICK	8"
OVER 4'-6"	CONC. REINF. W1 ※4 BARS 12" O.C. BOTH WAYS 2" CL. FROM SLAB TOP	8"

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

RED. & REDR. AUGUST, 1982

REV. & REDR.	R.M.U.
TRA.	G.M.E.
CHK.	R.K.C.

(SUBMITTED) Lloyd E. Hardy
STATE ROAD & AIRPORT DESIGN ENGR.

(APPROVED) Thomas D. Moore Jr.
STATE HIGHWAY ENGINEER

NUMBER 1033 D

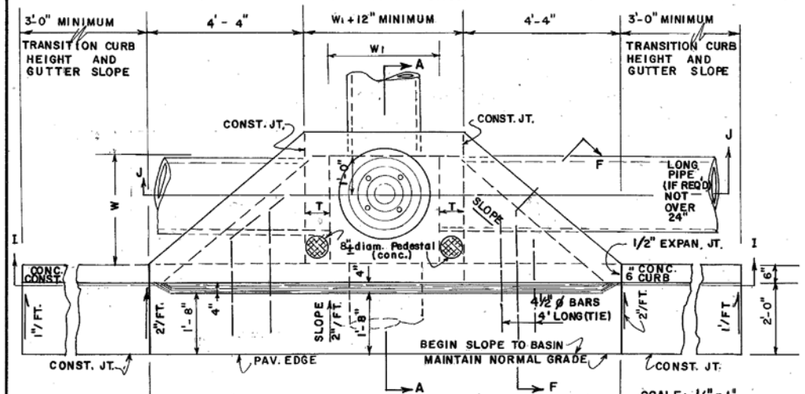
FORM EF3

AF 21868

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

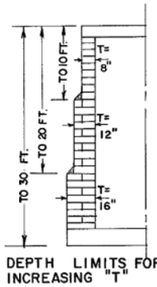
CATCH BASIN

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

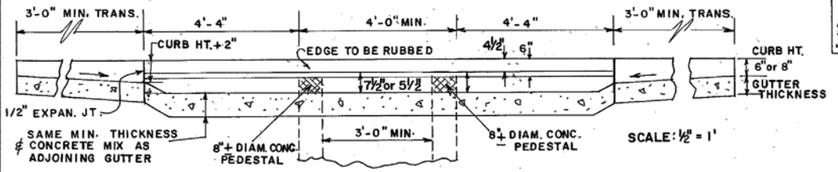


NOTE: 12'-8" (MIN.) - PAYMENT FOR CATCH BASIN INCLUDES ALL QUANTITIES BETWEEN THESE LINES EXCEPT ADDITIONAL DEPTH FOR BASIN (UNLESS OTHERWISE NOTED IN THE PLANS)

SCALE: ½" = 1'



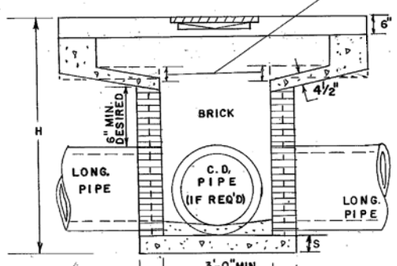
DEPTH LIMITS FOR INCREASING "T"



SCALE: ½" = 1'

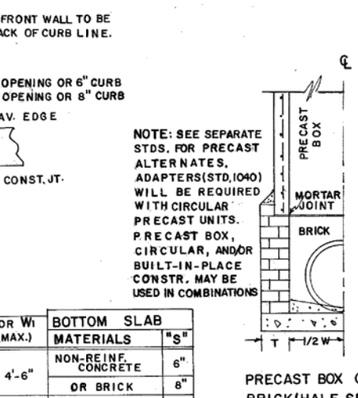
SECTION I-I

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

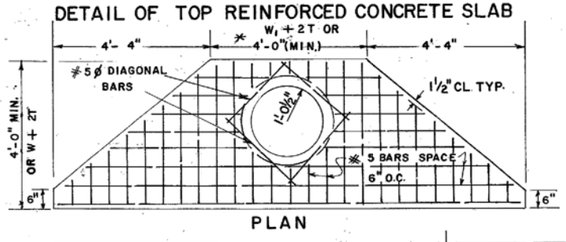
SCALE: ½" = 1'



SECTION A-A

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.

DETAIL OF TOP REINFORCED CONCRETE SLAB



PLAN

ELEVATION

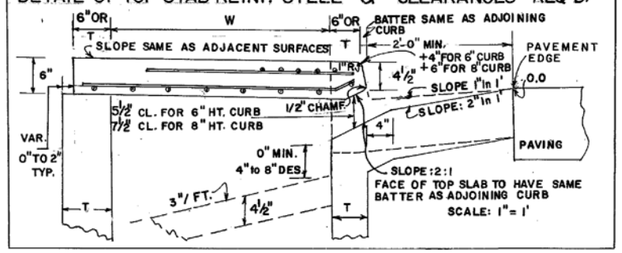
1½" FACE CONC. TO ℄ REINF.

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.

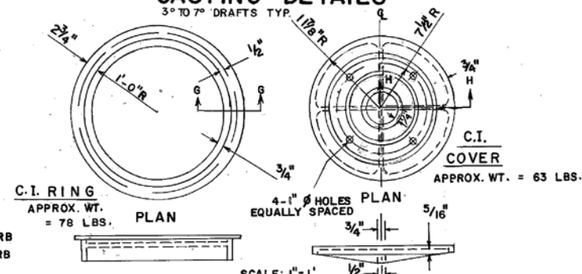
DETAIL OF TOP STAB REINF. STEEL & CLEARANCES REQ'D.

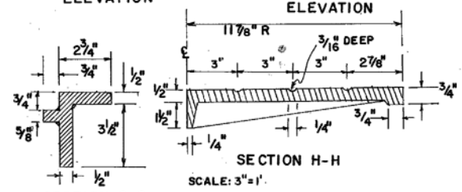


SCALE: 1" = 1'

CASTING DETAILS

3° TO 7° DRAFTS TYP.



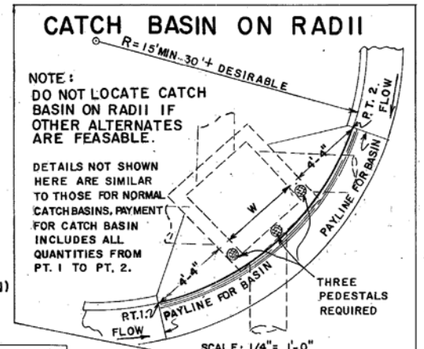


W or W1 (MAX.)	BOTTOM SLAB MATERIALS	"S"
TO 4'-6"	NON-REINF. CONCRETE	6"
	OR BRICK	8"
OVER 4'-6"	CONC. REINF. W1 4 BARS 12" O.C. BOTH WAYS 2" CL FROM SLAB TOP	8"

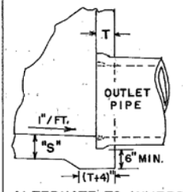
NOTE: SEE SEPARATE STDS. FOR PRECAST ALTERNATES, ADAPTERS (STD. 1040) WILL BE REQUIRED WITH CIRCULAR PRECAST UNITS. PRECAST BOX, CIRCULAR, AND/OR BUILT-IN-PLACE CONSTR. MAY BE USED IN COMBINATIONS

PRECAST BOX ON BRICK (HALF-SECTION)

CATCH BASIN ON RADII



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



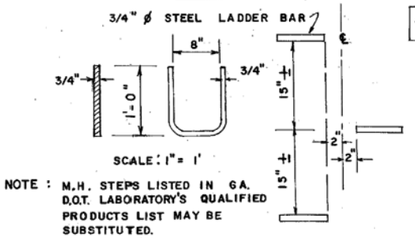
ALTERNATE TO INVERT

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"

TYPICAL MIN. DIMENSIONS

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

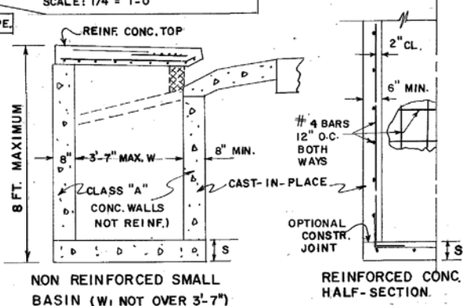
NOTE: THE MIN. H & MIN. ΔE GIVEN IN ABOVE TABLE ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONC. PIPE AND MAY BE VARIED, IF CONDITIONS PERMIT WITH VARIED DIMENSIONS SPECIFIED IN THE PLANS OR DIRECTED BY THE ENGINEER. W & W1 DIMENSIONS DO NOT HAVE TO BE EQUAL.



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



NON REINFORCED SMALL BASIN (W1 NOT OVER 3'-7")

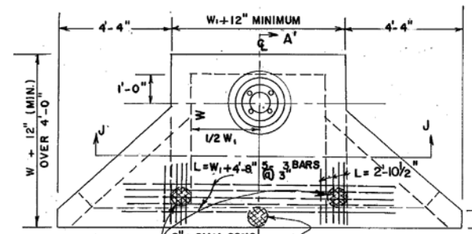
REINFORCED CONC. HALF-SECTION.

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

CONSTRUCTION ALTERNATES

CATCH BASIN (WITH PROTUDED BACK)

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



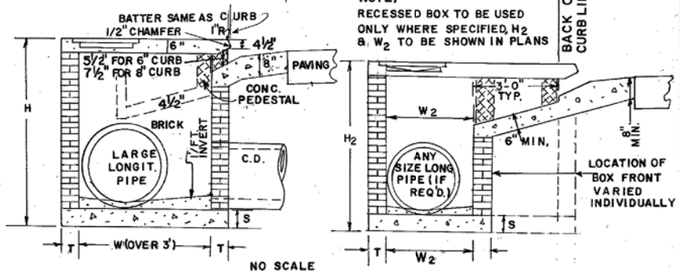
NO SCALE

THIRD PEDESTAL REQ'D. FOR C.B. ON RADII OR FOR RECESSED BOX

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

PART PLAN

NOTE:
RECESSED BOX TO BE USED ONLY WHERE SPECIFIED, H2 & W2 TO BE SHOWN IN PLANS



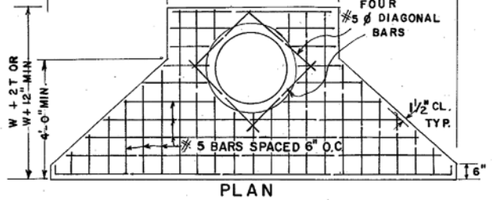
SECTION A'-A'

(FOR LONGIT. PIPE OVER 24")

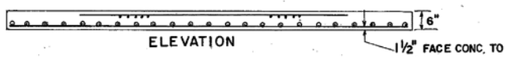
SECTION A'-A'

(FOR RECESSED BOX)

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 ACCOMODATE 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

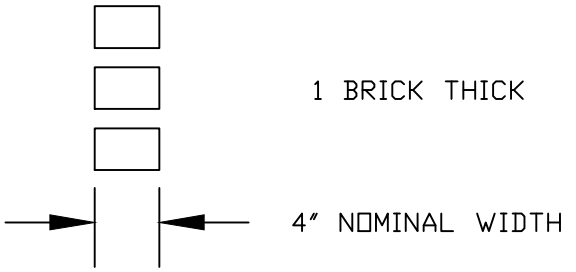
REV. & REDR. R.M.U.
TRA G.M.E.
CHK. R.K.C.

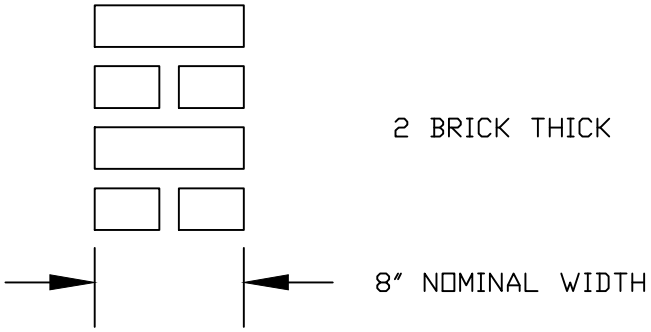
(SUBMITTED) Lloyd E. Hardy
STATE ROAD & AIRPORT DESIGN ENGR.

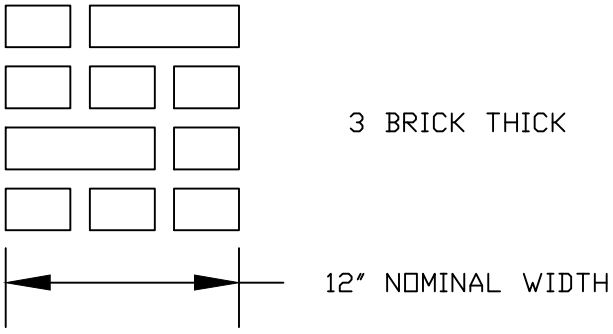
(APPROVED) Thomas D. Moseley
STATE HIGHWAY ENGINEER

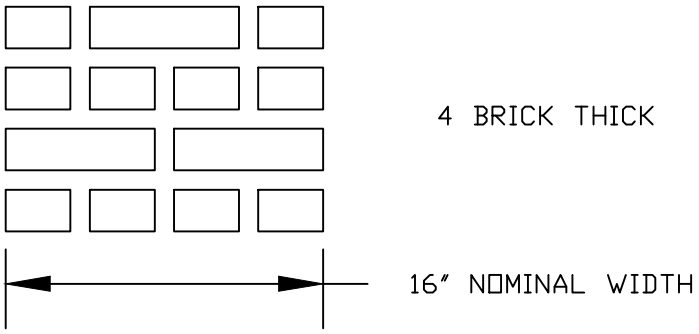
NUMBER 1034D

FORM EF3



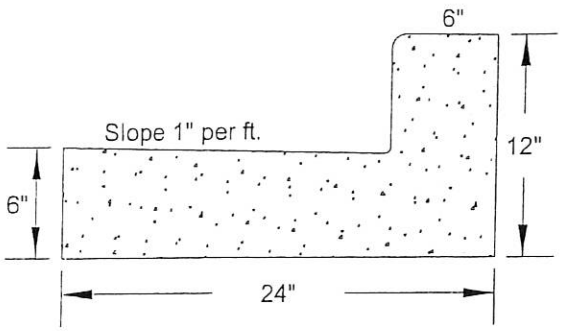




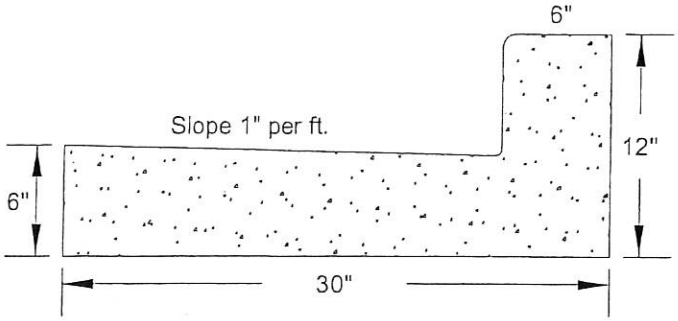


CLAYTON COUNTY WATER AUTHORITY		
DATE:	12 AUGUST 2013	DETAIL TITLE:
SCALE:	N.T.S.	BRICK WALL CONSTRUCTION
DRAWN BY:	WWB	

HIGH BACK CURB



FOR USE IN LIGHT COMMERCIAL AND RESIDENTIAL DEVELOPMENT

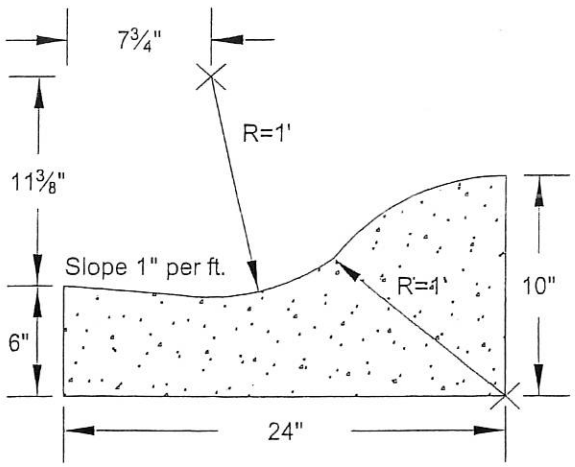


FOR USE IN COMMERCIAL/INDUSTRIAL DEVELOPMENTS AND ON COUNTY ROADWAYS

ALL CONCRETE FOR CONSTRUCTION WITHIN THE RIGHT-OF-WAY IS TO BE A CERTIFIED MIX FROM A GEORGIA D.O.T. APPROVED PLANT.
ALL CURB AND GUTTER IS TO BE CONSTRUCTED PER GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, SECTION 441
FOR ADDITIONAL INFORMATION, SEE GEORGIA D.O.T. STD 9032 B, TYPE 2.

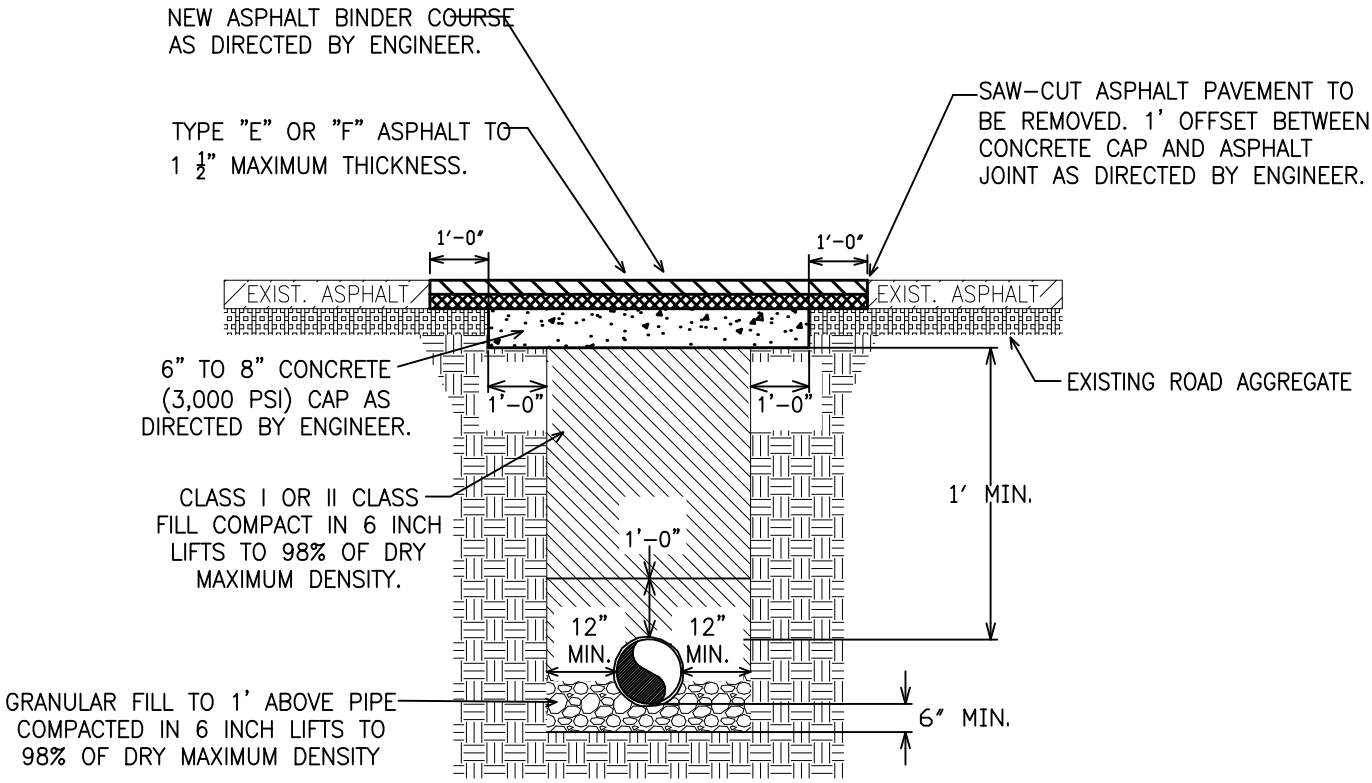
***ALL CURB AND GUTTER IS TO BE CONSTRUCTED WITH 6" COMPACTED GAB**

ROLLED BACK CURB



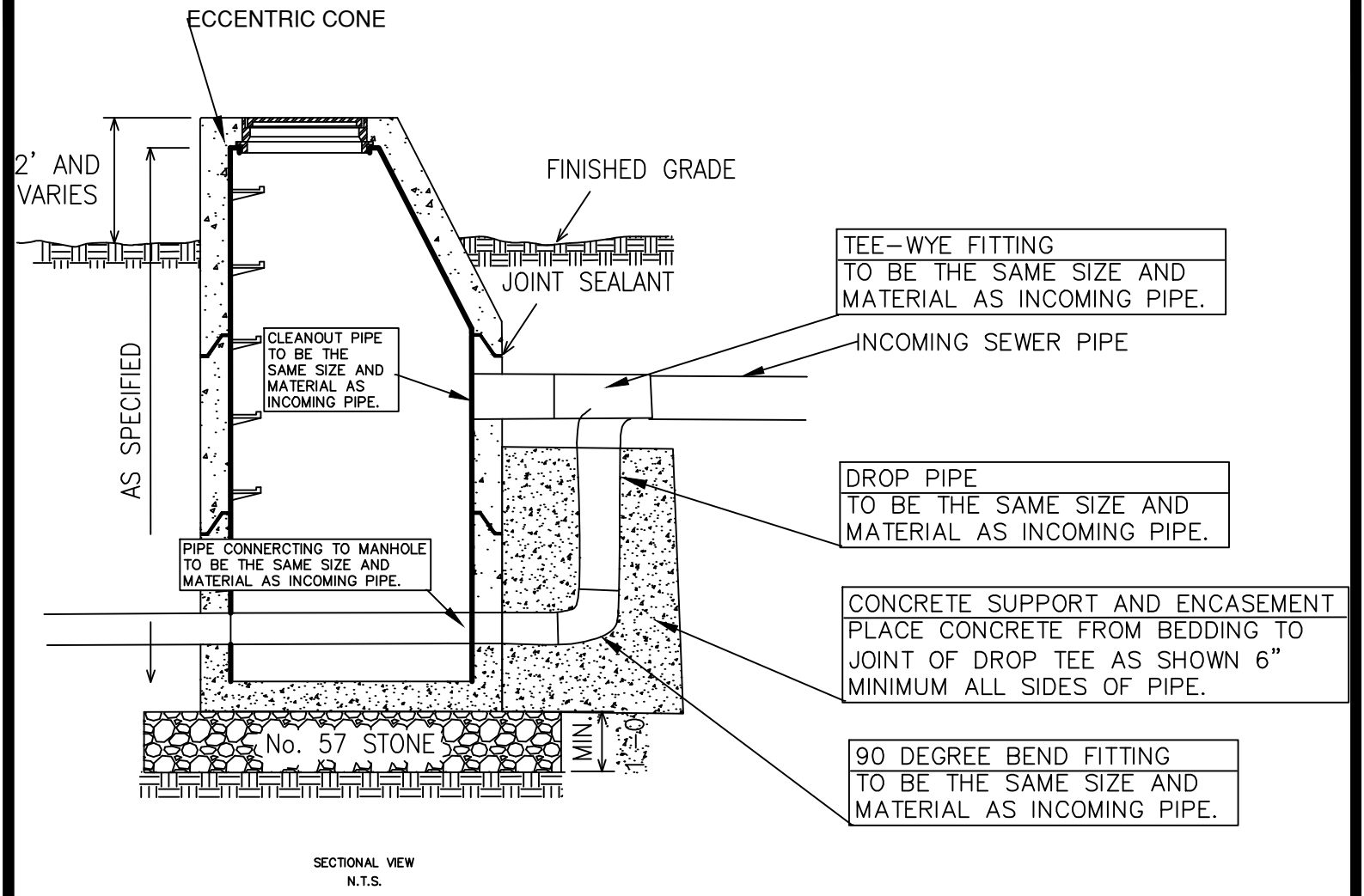
* WHEN TYING TO SUBDIVISIONS WITH HIGH BACK CURB & GUTTER, HIGH BACK CURB & GUTTER WILL BE REQUIRED

CLAYTON COUNTY DEPARTMENT OF TRANSPORTATION & DEVELOPMENT		
STANDARD DETAILS FOR: CURB & GUTTER		
DATE:	APPROVED BY:	Standard No. 101



TYPICAL ASPHALT CROSSING
N.T.S.

CLAYTON COUNTY WATER AUTHORITY		
DATE:	30 MAY 2024	DETAIL TITLE:
SCALE:	N.T.S.	TYPICAL ASPHALT CROSSING
DRAWN BY:	MAS	



SECTIONAL VIEW
N.T.S.

ERXTERNAL DROP PIPE DETAIL FOR SANITARY SEWER	STANDARD DETAIL 2

Waiver and Release of Lien and Payment Bond Rights Upon Interim Payment

STATE OF GEORGIA
COUNTY OF CLAYTON

WAIVER AND RELEASE OF LIEN AND PAYMENT BOND RIGHTS UPON INTERIM 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 and more particularly described as follows:

_____
_____
_____
[*describe the property upon which the improvements were made using either a street address of the project, metes and bounds description, or the land lot district, 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 or any rights against any labor and/or material bond through the date of _____ [*date of signature*] 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 WAIVED AND RELEASED ANY AND ALL LIENS AND CLAIMS OF LIENS UPON THE FOREGOING DESCRIBED PROPERTY AND ANY RIGHTS REGARDING ANY LABOR OR MATERIAL BOND REGARDING THE SAID PROPERTY TO THE EXTENT (AND ONLY TO THE EXTENT) SET FORTH ABOVE, EVEN IF YOU HAVE NOT ACTUALLY RECEIVED SUCH PAYMENT, 90 DAYS AFTER THE DATE STATED ABOVE UNLESS YOU FILE AN AFFIDAVIT OF NONPAYMENT PRIOR TO THE EXPIRATION OF SUCH 90 DAY PERIOD. THE FAILURE TO INCLUDE THIS NOTICE LANGUAGE ON THE FORM SHALL RENDER THE FORM UNENFORCEABLE AND INVALID AS A WAIVER AND RELEASE UNDER O.C.G.A. § 44-14-366.

[SIGNATURES ON NEXT PAGE]

COUNTERPARTS AND ELECTRONIC SIGNATURES: This Waiver may be executed in one or more counterparts, each of which will be deemed to be an original, but all of which together will constitute one and the same instrument. An executed signature page delivered via facsimile transmission or electronic signature shall be deemed as effective as an original executed signature page.

GIVEN UNDER HAND AND SEAL THIS ____ DAY OF _____, 20___.

_____ (SEAL)
(Signature of Deponent)

_____
(Printed/Typed Name and Title)

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

_____
(Company Name)

_____ _____
(Witness) (Address)

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)

Waiver and Release of Lien and Payment Bond Rights Upon Final Payment

STATE OF GEORGIA
COUNTY OF CLAYTON

WAIVER AND RELEASE OF LIEN AND PAYMENT BOND RIGHTS 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 located in the City of _____, County of _____, and is owned by the Clayton County Water Authority and more particularly described as follows:

_____
_____
_____

[*describe the property upon which the improvements were made using either a street address of the project, metes and bounds description, or the land lot district, 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 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 Clayton County Water Authority for said property.

NOTICE: WHEN YOU EXECUTE AND SUBMIT THIS DOCUMENT, YOU SHALL BE CONCLUSIVELY DEEMED TO HAVE WAIVED AND RELEASED ANY AND ALL LIENS AND CLAIMS OF LIENS UPON THE FOREGOING DESCRIBED PROPERTY AND ANY RIGHTS REGARDING ANY LABOR OR MATERIAL BOND REGARDING THE SAID PROPERTY TO THE EXTENT (AND ONLY TO THE EXTENT) SET FORTH ABOVE, EVEN IF YOU HAVE NOT ACTUALLY RECEIVED SUCH PAYMENT, 90 DAYS AFTER THE DATE STATED BELOW UNLESS YOU FILE AN AFFIDAVIT OF NONPAYMENT PRIOR TO THE EXPIRATION OF SUCH 90 DAY PERIOD. THE FAILURE TO INCLUDE THIS NOTICE LANGUAGE ON THE FORM SHALL RENDER THE FORM UNENFORCEABLE AND INVALID AS A WAIVER AND RELEASE UNDER O.C.G.A. § 44-14-366.

COUNTERPARTS AND ELECTRONIC SIGNATURES: This Waiver may be executed in one or more counterparts, each of which will be deemed to be an original, but all of which together will constitute one and the same instrument. An executed signature page delivered via facsimile transmission or electronic signature shall be deemed as effective as an original executed signature page.

PERSONALLY, APPEARED BEFORE ME, the undersigned officer, duly authorized by law to administer oaths, comes _____ (the "Deponent"), who after first being duly sworn according to law, deposes and says under oath as follows:

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.

GIVEN UNDER HAND AND SEAL THIS ____ DAY OF _____, 20___.

_____ (SEAL)
(Signature of Deponent)

_____
(Printed/Typed Name and Title)

_____ _____
(Witness) (Address)

NOTARY ACKNOWLEDGMENT

Sworn to and subscribed 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)

W-9 Form

Form **W-9**
(Rev. March 2024)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give form to the requester. Do not send to the IRS.

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See ***Specific Instructions*** on page 3.

1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)

2 Business name/disregarded entity name, if different from above.

3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor ☐ C corporation ☐ S corporation ☐ Partnership ☐ Trust/estate

☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) . . . . .

Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner.

☐ Other (see instructions)

3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions . . . . . ☐

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any)

Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any)

(Applies to accounts maintained outside the United States.)

5 Address (number, street, and apt. or suite no.). See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	**Signature of U.S. person**	**Date**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

must obtain your correct taxpayer identification number (TIN), which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

• Form 1099-INT (interest earned or paid).

• Form 1099-DIV (dividends, including those from stocks or mutual funds).

• Form 1099-MISC (various types of income, prizes, awards, or gross proceeds).

• Form 1099-NEC (nonemployee compensation).

• Form 1099-B (stock or mutual fund sales and certain other transactions by brokers).

• Form 1099-S (proceeds from real estate transactions).

• Form 1099-K (merchant card and third-party network transactions).

• Form 1098 (home mortgage interest), 1098-E (student loan interest), and 1098-T (tuition).

• Form 1099-C (canceled debt).

• Form 1099-A (acquisition or abandonment of secured property).

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

Caution: If you don't return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding*, later.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued);

2. Certify that you are not subject to backup withholding; or

3. Claim exemption from backup withholding if you are a U.S. exempt payee; and

4. Certify to your non-foreign status for purposes of withholding under chapter 3 or 4 of the Code (if applicable); and

5. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting is correct. See *What Is FATCA Reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

• An individual who is a U.S. citizen or U.S. resident alien;

• A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;

• An estate (other than a foreign estate); or

• A domestic trust (as defined in Regulations section 301.7701-7).

Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding. Payments made to foreign persons, including certain distributions, allocations of income, or transfers of sales proceeds, may be subject to withholding under chapter 3 or chapter 4 of the Code (sections 1441–1474). Under those rules, if a Form W-9 or other certification of non-foreign status has not been received, a withholding agent, transferee, or partnership (payor) generally applies presumption rules that may require the payor to withhold applicable tax from the recipient, owner, transferor, or partner (payee). See Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities.

The following persons must provide Form W-9 to the payor for purposes of establishing its non-foreign status.

• In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the disregarded entity.

• In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the grantor trust.

• In the case of a U.S. trust (other than a grantor trust), the U.S. trust and not the beneficiaries of the trust.

See Pub. 515 for more information on providing a Form W-9 or a certification of non-foreign status to avoid withholding.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person (under Regulations section 1.1441-1(b)(2)(iv) or other applicable section for chapter 3 or 4 purposes), do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515). If you are a qualified foreign pension fund under Regulations section 1.897(l)-1(d), or a partnership that is wholly owned by qualified foreign pension funds, that is treated as a non-foreign person for purposes of section 1445 withholding, do not use Form W-9. Instead, use Form W-8EXP (or other certification of non-foreign status).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a saving clause. Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if their stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first Protocol) and is relying on this exception to claim an exemption from tax on their scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include, but are not limited to, interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third-party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester;

2. You do not certify your TIN when required (see the instructions for Part II for details);

3. The IRS tells the requester that you furnished an incorrect TIN;

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only); or

5. You do not certify to the requester that you are not subject to backup withholding, as described in item 4 under "*By signing the filled-out form*" above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier.

What Is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all U.S. account holders that are specified U.S. persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you are no longer tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

• **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note for ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040 you filed with your application.

• **Sole proprietor.** Enter your individual name as shown on your Form 1040 on line 1. Enter your business, trade, or "doing business as" (DBA) name on line 2.

• **Partnership, C corporation, S corporation, or LLC, other than a disregarded entity.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

• **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. Enter any business, trade, or DBA name on line 2.

• **Disregarded entity.** In general, a business entity that has a single owner, including an LLC, and is not a corporation, is disregarded as an entity separate from its owner (a disregarded entity). See Regulations section 301.7701-2(c)(2). A disregarded entity should check the appropriate box for the tax classification of its owner. Enter the owner's name on line 1. The name of the owner entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2. If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, enter it on line 2.

Line 3a

Check the appropriate box on line 3a for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3a.

IF the entity/individual on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation.
• Individual or • Sole proprietorship	Individual/sole proprietor.
• LLC classified as a partnership for U.S. federal tax purposes or • LLC that has filed Form 8832 or 2553 electing to be taxed as a corporation	Limited liability company and enter the appropriate tax classification: P = Partnership, C = C corporation, or S = S corporation.
• Partnership	Partnership.
• Trust/estate	Trust/estate.

Line 3b

Check this box if you are a partnership (including an LLC classified as a partnership for U.S. federal tax purposes), trust, or estate that has any foreign partners, owners, or beneficiaries, and you are providing this form to a partnership, trust, or estate, in which you have an ownership interest. You must check the box on line 3b if you receive a Form W-8 (or documentary evidence) from any partner, owner, or beneficiary establishing foreign status or if you receive a Form W-9 from any partner, owner, or beneficiary that has checked the box on line 3b.

Note: A partnership that provides a Form W-9 and checks box 3b may be required to complete Schedules K-2 and K-3 (Form 1065). For more information, see the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

If you are required to complete line 3b but fail to do so, you may not receive the information necessary to file a correct information return with the IRS or furnish a correct payee statement to your partners or beneficiaries. See, for example, sections 6698, 6722, and 6724 for penalties that may apply.

Line 4 Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

• Generally, individuals (including sole proprietors) are not exempt from backup withholding.

• Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.

• Corporations are not exempt from backup withholding for payments made in settlement of payment card or third-party network transactions.

• Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space on line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2).

2—The United States or any of its agencies or instrumentalities.

3—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities.

5—A corporation.

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or territory.

7—A futures commission merchant registered with the Commodity Futures Trading Commission.

8—A real estate investment trust.

9—An entity registered at all times during the tax year under the Investment Company Act of 1940.

10—A common trust fund operated by a bank under section 584(a).

11—A financial institution as defined under section 581.

12—A middleman known in the investment community as a nominee or custodian.

13—A trust exempt from tax under section 664 or described in section 4947.

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
• Interest and dividend payments	All exempt payees except for 7.
• Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
• Barter exchange transactions and patronage dividends	Exempt payees 1 through 4.
• Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5.[2]
• Payments made in settlement of payment card or third-party network transactions	Exempt payees 1 through 4.

[1] See Form 1099-MISC, Miscellaneous Information, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) entered on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37).

B—The United States or any of its agencies or instrumentalities.

C—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i).

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i).

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state.

G—A real estate investment trust.

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940.

I—A common trust fund as defined in section 584(a).

J—A bank as defined in section 581.

K—A broker.

L—A trust exempt from tax under section 664 or described in section 4947(a)(1).

M—A tax-exempt trust under a section 403(b) plan or section 457(g) plan.

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, enter "NEW" at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have, and are not eligible to get, an SSN, your TIN is your IRS ITIN. Enter it in the entry space for the Social security number. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.SSA.gov*. You may also get this form by calling 800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/EIN*. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or Form SS-4 mailed to you within 15 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and enter "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, you will generally have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon. See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier, for when you may instead be subject to withholding under chapter 3 or 4 of the Code.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third-party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantor trust filing under Optional Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))**	The grantor*
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing Form 1041 or under the Optional Filing Method 2, requiring Form 1099 (see Regulations section 1.671-4(b)(2)(i)(B))**	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name on line 1, and enter your business or DBA name, if any, on line 2. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

* **Note:** The grantor must also provide a Form W-9 to the trustee of the trust.

** For more information on optional filing methods for grantor trusts, see the Instructions for Form 1041.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information, such as your name, SSN, or other identifying information, without your permission to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax return preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity, or a questionable credit report, contact the IRS Identity Theft Hotline at 800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 877-777-4778 or TTY/TDD 800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 800-366-4484. You can forward suspicious emails to the Federal Trade Commission at *spam@uce.gov* or report them at *www.ftc.gov/complaint*. You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Go to *www.irs.gov/IdentityTheft* to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and territories for use in administering their laws. The information may also be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payors must generally withhold a percentage of taxable interest, dividends, and certain other payments to a payee who does not give a TIN to the payor. Certain penalties may also apply for providing false or fraudulent information.

Vendor Information Form

CLAYTON COUNTY WATER AUTHORITY
FINANCE DEPARTMENT
1600 BATTLE CREEK ROAD | MORROW, GEORGIA 30260
Phone: (770) 960-5880 | Web Site: www.ccwa.us

VENDOR INFORMATION FORM

Purpose of this Form: The *Vendor Information Form* is used by the Clayton County Water Authority (CCWA) to add Vendors/Suppliers to its financial database system and add business designations when applicable.

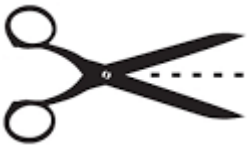
Important Note: What name will appear on the Invoice? Invoice name shall be reflected on the *Vendor Information Form* and match the *W-9 Form*.

PURCHASING DATA			
NIGP CODE(s):		CCWA REQUESTING DEPARTMENT CONTACT:	
VENDOR INFORMATION			
VENDOR NAME:			
PRINCIPAL CONTACT:		EMAIL ADDRESS:	PHONE NO.
MAILING ADDRESS		REMIT TO ADDRESS	
Street		Street	
City		City	
State	Zip Code	State	Zip Code
PAYMENT REMITTANCE INFORMATION			
PAYMENT TERMS: ☐ NET 30		**PAYMENT TYPE:** ☐ PAPER CHECK ☐ ACH PAYMENT (If selected, *ACH Authorization Form* will be e-mailed to the awarded vendor).	
BUSINESS CLASSIFICATION			
☐ CCWA SLBE ☐ WBE ☐ MBE ☐ DBE ☐ Other SBE ☐ Veteran-Owned Business			

FOR OFFICE USE ONLY: CCWA Procurement & Contract Specialist shall e-mail the awarded vendor's *Vendor Information Form* and *W-9 Form* to ccwa_newvendorrequest@ccwa.us.

BID PACKAGE LABEL

Please use the label below to properly mark your bid package, which will help route it to the proper location timely.



DELIVER TO: **CLAYTON COUNTY WATER AUTHORITY**
1600 Battle Creek Road
Morrow, GA 30260
***Attention*: PROCUREMENT**

Annual Contract for General Pipe Work

RFB ID #: 2024-SW-22

Due Date and Time: Tuesday, August 27, 2024 at 2:00 p.m. local time

VENDOR NAME: _____

Address: _____

City, State, Zip: _____

GA Utility License No: _____

ADDENDA