

CALHOUN UTILITIES



2020 ANNUAL UNIT PRICE CONTRACT FOR INSTALLATION OF WATER AND SEWER LINES

James F. Palmer, Mayor
George Crowley, Councilman
Al Edwards, Councilman
Ray Denman, Councilman
Jackie Palazzolo, Councilman

Larry Vickery, General Manager

September 2020

Prepared by
City of Calhoun
Engineering Department
Calhoun, Georgia

TABLE OF CONTENTS

00100 Advertisement for Bids

00200 Information for Bidders

00300 Bidding Requirements and Documents

00400 Bid Schedule for Unit Price

00500 Bid Bond

00600 (Omitted)

00700 (Omitted)

00800 Partnership Certificate

00900 Corporate Certificate

01000 Noncollusion Affidavit of Prime Bidder

01100 Noncollusion Affidavit of Subcontractor

01200 Statement of License Certificate

02000 Contract Documents

02000 Agreement

02100 Performance Bond

02200 Payment Bond

02300 Change Order

02400 Notice of Award

02500 Notice to Proceed

02600 Certificate of Substantial Completion

02700 Certificate of Owner's Attorney

03000 Project Close-Out

03200 Affidavit of Payment

General & Supplemental Conditions

04000 General Conditions

04100 Supplemental General Conditions

04200 (Omitted)

Procedures and Requirements

04300 Traffic Regulation

04600 Submittals

04700 Measurements and Payment

04800 Project Record Documents

04900 Testing and Inspections

Technical Specifications

100-1 Technical Specifications

ADVERTISEMENT FOR BIDS

Section 0100

Sealed Bids for the **Annual Unit Price Contract for Installation of Water and Sewer Lines** will be received by the Owner at the City of Calhoun Purchasing Department, 700 West Line Street (Attention: Barry Bohannon, Purchasing Director) until 2:00 p.m., local time, on **Wednesday, October 28, 2020** and then publicly opened and read aloud at the City of Calhoun Annex, located at 700 West Line Street.

The Bid will be for the labor and equipment to install water and sewer pipelines at various locations within the City of Calhoun and Gordon County. **The Owner will supply the water and sewer pipe and appurtenances.** Over the next three years, the work is expected to include approximately 100,000 L.F. of 8" & 12" water main, 2,000 L.F. of cased bores, 10,000 L.F. of gravity sewer, 40 sewer manholes, all connections, fittings, fire hydrants and appurtenances as specified or indicated on the Drawings, including but not limited to clearing, grading, trenching, backfilling, testing, property restoration, erosion control and grassing.

Individual Work Orders will be assigned as needed and work must begin within thirty (30) days of each assignment. Normally, at least five hundred (500) linear feet of pipeline will be included in each Work Order.

Payment for the work will be made periodically on the basis of Contractor's Applications for Payment.

Copies of the Contract Documents and Specifications, including bidding documents and requirements, may be examined at the City of Calhoun Annex, phone (706) 629-4701. Copies may be obtained there, until 48 hours before the bid opening, upon payment of \$75.00 for each set. This payment is not refundable. Requests for documents, including payment, can also be mailed to David Burnett, Calhoun Utility Engineering, 700 W. Line Street, Calhoun, GA, 30701. Requests should include the following information: mailing address and physical address for shipping, telephone number, FAX number, and name of contact person. You can download the complete bid documents and specifications, at no cost, from our website at <http://www.cityofcalhoun-ga.com/Engineering/>.

All interested contractors must submit evidence that they are qualified to perform the work prior to bidding on this project. Prequalification packages may be obtained from the office of Calhoun Utility Engineering or by telephone at (706) 602-6089. The completed Contractor prequalification submittal must be returned to the Utility Engineering office for evaluation no later than October 16, 2020.

Bids must be accompanied by a Bid Bond in the amount of five percent (5%) of the total amount bid, up to a maximum amount of \$25,000. All bonds must be countersigned by a Georgia Resident Agent. Performance and Payment Bonds, each in the amount of one hundred percent (100%) of the amount of each Work Order, must be furnished by the successful. A cash bond may be made in lieu of the Performance and Payment Bonds.

The Owner reserves the right to delay awarding of the contract for a period not to exceed sixty (60) days from the date of opening of the bids, during which time the bids shall remain open and not subject to withdrawal. The right is also reserved to reject any and all bids and to waive any and all technicalities or formalities.

City of Calhoun

Larry Vickery, Utilities General Manager
September 21, 2020

INFORMATION FOR BIDDERS

1. *Receipt and Opening of Bids*

City of Calhoun (herein called the "Owner"), invites Bids on the form attached hereto, all blanks of which must be appropriately filled in.

The Owner may consider informal any Bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all Bids. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No Bidder may withdraw a Bid within 60 days after the actual date of the opening thereof.

2. *Preparation of Bid*

Each Bid shall be submitted on the Bid forms bound in the Contract Documents. All blank spaces for Bid prices must be filled in, in ink or typewritten. All computations will be checked; and in the event of a discrepancy, the unit price will govern. All required enclosed certifications must be fully completed and executed when submitted.

Each Bid must be submitted in a sealed envelope, addressed to the Owner. Each sealed envelope containing a Bid must be plainly marked on the outside as, "**City of Calhoun, Georgia, 2020 Annual Unit Price Contract for the Installation of Water and Sewer Lines**".

If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the City of Calhoun Purchasing Department at 700 W. Line St., Calhoun, GA 30701. Any and all Bids not meeting the aforementioned *criteria* for Bid submittal, will be declared non-responsive, will not be opened, and will be returned to the Bidder unopened.

3. *Subcontracts*

The Bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the Owner and funding agencies.

4. *Facsimile Modifications*

Any Bidder may modify his Bid by facsimile communication at any time prior to the scheduled closing time for receipt of Bids, provided such facsimile communication is received by the Owner prior to the closing time, and, provided further, the Owner is satisfied that a written confirmation of the facsimile modification over the signature of the Bidder was mailed prior to the closing time. The facsimile communication should not reveal the Bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed Bid is opened. If written confirmation is not received within two days from the closing time, no consideration will be given to the facsimile modification.

5. *Overhead, Profit, and Revision of Quantities*

The unit or lump sum price for each of the several items in the proposal of each Bidder shall include its pro rata share of overhead and profit so that the sum of the products obtained by multiplying the quantity shown for each item by the unit price represents the total Bid. Any Bid not conforming to this requirement may be rejected as informal. The special attention of all Bidders is called to this provision, for should conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities nor extra compensation allowed, provided the net monetary value of all such addition or subtraction in quantities of such items of work {i.e., difference in cost} shall not increase or decrease the total original contract price by more than 25 percent, except for work not covered in the Drawings and Detailed Specifications as provided for under General Conditions and Supplemental General Conditions.

6. Qualifications of Bidder

The Owner may make such investigations as deemed necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein. Conditional Bids will not be accepted.

7. Bid Security

Each Bid must be accompanied by a cashier's check on a duly authorized bank, certified check of the Bidder, or a bid bond prepared on the form of bid bond attached hereto, duly executed by the Bidder as principal and having as security thereon a surety company listed in the latest issue of U.S. Treasury Circular 570, in the amount of 5 percent of the Bid, up to a maximum of \$25,000. A cash bond may be made in lieu of the Bid Bond. Certified checks or cashier's checks shall be made payable to the Owner. Such checks or bid bonds will be returned to all except the three lowest Bidders within three days after the opening of Bids; the remaining checks or bid bonds will be returned promptly after the Owner and the accepted Bidder have executed the contract, or, if no award has been made within 60 days after the date of the opening of Bids, upon demand of the Bidder at any time thereafter, so long as he has not been notified of the acceptance of his Bid.

8. Liquidated Damages for Failure to Enter into Contract

The successful Bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within 10 days after he has received notice of the acceptance of his Bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his Bid.

9. Contract Time

An Agreement will be executed for a one year period during which time the unit prices will be used to price individual Work Orders to be issued by the Owner. The Contract time for each Work Order will be mutually agreed upon by both parties.

10. Conditions of Work

a. Each Bidder must inform himself fully of the conditions relating to the construction of the Project and the employment of labor thereon. Failure to do so will not relieve a successful Bidder of his obligation to furnish all material and labor necessary to carry out the provision of his Contract. Insofar as possible the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor. The work will consist of all labor, material and equipment for the installation of water and/or sanitary sewer utility infrastructure as specified or indicated on the Drawings, including but not limited to clearing, grading, trenching, backfilling, testing, property restoration, grassing and erosion control.

b. Unless otherwise specified, the unit price bid shall include transportation of materials to the sites and all connections to existing facilities.

c. Incidental supplies, materials, and/or equipment not included as a pay item, but required to complete the Work in accordance with the Contract Documents, shall be furnished by the Contractor.

11. Addenda and Interpretations

No interpretation of the meaning of the Drawings, Specifications, or other pre-bid documents will be made to any Bidder orally. Every request for such interpretation should be in writing addressed to Kyle W. Ellis, P.E.,

Water and Sewer Director, City of Calhoun, 700 W. Line St., Calhoun, GA 30701 and to be given consideration must be received at least five days prior to the date fixed for the opening of Bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the Specifications which, if issued, will be mailed and transmitted by facsimile to all prospective Bidders (at the respective addresses and facsimile numbers furnished for such purposes), not later than three days prior to the date fixed for the opening of Bids. Failure of any Bidder to receive any such addendum or interpretation shall not relieve such Bidder from any obligation under his Bid as submitted. All addenda so issued shall become a part of the Contract Documents.

12. *Security for Faithful Performance*

Simultaneously with his delivery of the executed Contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of this Contract and for the payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions included herein. Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

13. *Power of Attorney*

Attorney-in-fact *who* sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

14. *Notice of Special Conditions*

Attention is particularly called to those parts of the Contract Documents and Specifications which deal with the following:

- a. Inspection and testing of materials
- b. Insurance requirements
- c. Wage rates
- d. Surveys, permits, and regulations

The federal regulations enclosed or herein referred to supersede all conflicting requirements of the Contract Documents.

15. *Laws and Regulations*

The Bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

16. *Obligation of Bidder*

At the time of the opening of Bids, each Bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Drawings and Contract Documents (including all addenda). The failure or omission of any Bidder to examine any form, instrument, or document shall in no way relieve any Bidder from any obligation in respect of his Bid.

17. *Execution of Bid Documents*

The Contractor, in signing his Bid on the whole or any portion of the work, shall conform to the following requirements:

- a. Bids which are not signed by individuals making them shall have attached thereto a power of attorney evidencing authority to sign the Bid in the name of the person for whom it is signed.
- b. Bids which are signed for a partnership shall be signed by all of the partners or by an attorney-in-fact. If a Bid is signed by an attorney-in-fact, there should be attached to the Bid a power of attorney executed by the partners evidencing authority to sign the Bid.
- c. Bids which are signed for a corporation shall have the correct corporate name thereof and the signature of the President or other authorized officer of the corporation manually written below the corporate name following the wording "By _____." Corporation seal shall also be affixed to the Bid.

18. Method of Award -Lowest Qualified Bidder

The Contract will be awarded to the responsive, responsible Bidder submitting the lowest Bid complying with the conditions of the Information for Bidders. A ward will be made on the basis of the prices given in the base Bid either with or without alternates at the discretion of the Owner. The Bidder to whom the award is made will be notified at the earliest possible date. The Owner reserves the right to reject any and ell Bids and to waive any informality in Bids received whenever such rejection or waiver is in its interest.

A responsive Bidder shall be one who submits his Bid in the proper form without qualification or intent other than as called for in the Specifications and on the Contract Drawings and who binds himself on behalf of his Bid to the Owner with the proper bid bond or certified check completed and attached, and who properly completes all forms required to be completed and submitted at the time of the bidding.

A responsible Bidder shall be one who can fulfill the following requirements:

- a. The Bidder shall maintain a permanent place of business. This requirement applies to the Bidder where the Bidder is a division of a corporation, or where the Bidder is 50 percent or more owned by a person, corporation, or firm.
- b. The Bidder shall demonstrate that he has adequate construction management experience and sufficient equipment resources to properly perform the work under and in conformance with these Contract Documents. This evaluation will be based upon a list of completed or active projects and a list of construction equipment available to the Bidder to perform the work.
- c. The Bidder shall demonstrate that he is familiar with the work under these Contact Documents. This evaluation will be based upon a list of major equipment items the Bidder proposes to furnish and a list of subcontractors the Bidder proposes to use in prosecuting the work.
- d. The Bidder shall demonstrate that he has financial resources of sufficient strength to meet the obligations incident to the performance of the work covered by these Contract Documents. The Bidder shall complete the Statement of Bidder's Qualifications in the Bid forms. The ability to obtain the required Performance and Payment Bonds will not alone demonstrate adequate financial capability.
- e. The Bidder may demonstrate financial capability by submitting a suitable financial statement of an Equity Partner, provided an agreement is executed binding the Bidder and said Equity Partner, jointly and severally, to fulfill all duties, obligations, and responsibilities of the Contractor under these Contract Documents if the Contract is awarded to the Bidder. The agreement shall be submitted with the Bid and shall be satisfactory to the Owner's attorney or the Bid may be declared non-responsive.
- f. The Bidder shall furnish all data required by these Contract Documents. Failure to do so may result in the Bid being declared non-responsive. Acceptance of the Bidder's documentation and substantiation or contract

award by the Owner does not relieve the Bidder of liability for nonperformance as covered in the Contract Documents, nor will the Bidder be exempted from any other legal recourse the Owner may elect to pursue.

19. *Bid Envelope*

All Bidders must be contractors in the State of Georgia. The envelope in which the Bid is contained must also bear on the outside the following:

- 1) Name of Bidder
- 2) Address of the Bidder;
- 3) Name of Project for which Bid is submitted;
- 4) Bidder's License Number;
- 5) Bidder's License Category or Classification; and
- 6) Bidder's License Expiration Date.

Bid envelopes that do not bear the above information will be returned to the Bidder unopened.

A copy of the form found on the last page of this section properly completed to provide the required information as identified above shall be affixed to the front of the envelope containing the Bidder's proposal.

20. *Permits and Easement Acquisitions*

All temporary and permanent easements required for construction may or may not have been acquired; however, it is the intention of the Owner to obtain all necessary easements before construction.

21. *Georgia Security and Immigration Compliance Act*

Bidders must comply with all provisions of the *Georgia Security and Immigration Compliance Act*.

22. *Funding Related Requirements*

All or part of the project will be constructed with funds from the Georgia State Revolving Loan Fund (U.S. EPA Construction Funds). *The Contractor must comply with any special requirements of this funding source.*

22. *City Intends to Furnish the Materials*

The City will furnish all permanent piping and appurtenances, such as, valves, hydrants, and manholes. Also, the City intends to provide the material for any other listed bid item. For example, the City will furnish rip rap, silt fence, and the concrete for sidewalks because those are all bid items.

Incidentals that are not bid items, but are required by the drawings or specifications will not be furnished. For instance, crushed stone for typical pipe bedding and concrete for thrust blocks will not be provided by the City. One exception to the above statement is the tracing wire over pipelines. Tracing wire is an incidental that is not a bid item; however, the City still intends to furnish that to the Contractor.

Please see Section 04700, Measurement and Payment, for further information.

**SEALED BID PROPOSAL FOR CONSTRUCTION OF THE
2020 Annual Unit Price Contract for the Installation
of Water and Sewer Lines
City of Calhoun, Georgia**

CONTRACTOR'S IDENTIFICATION

This form shall be attached to the sealed envelope containing the Bid. Failure to provide the following information on the sealed envelope will be considered a non-responsive Bid.

BIDDER:

Name _____

Address _____

Georgia Utility Contractor's License No. _____

License Classification _____

License Expiration Date _____

BIDDING REQUIREMENTS AND DOCUMENTS

00300

BID

Project Description: **2020 One Annual Unit Price Contract for the Installation of Water and Sewer Lines**

Proposal of

(hereinafter called "Bidder"), doing business as a corporation, a partnership, an individual.

To the City of Calhoun (hereinafter called "Owner").

Bidders:

The Bidder, in compliance with your Advertisement for Bids for the construction of this project having examined the Drawings and Specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the price(s) stated below. This price(s) is to cover all expenses including overhead and profit incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Bidder acknowledges receipt of the following addenda:

Addenda ___/___/___/___/___/___/___

Bidder agrees to perform all the construction of the project complete with appurtenant and accessory work described in the Specifications and shown on the plans for the attached price(s).

The attached price(s) shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

BASE BID PRICE

The Contract Documents were prepared based on the use of certain material and equipment from specific manufacturers named and identified in the Specifications. Naming the manufacturer in the Specifications is intended to establish a minimum standard of the type,

function, and quality required. Identifying the manufacturer is intended to establish a common basis for all bids to ensure that the Owner receives the full benefit of any savings in cost that may be associated with substitute material and equipment from an alternate manufacturer.

SUBSTITUTE MATERIAL AND EQUIPMENT

- A. Pursuant to Federal and State regulations, it is not the intent of the Contract Documents to contain proprietary, exclusionary or discriminatory requirements other than those based on performance.
- B. Bidders who believe substitute material and equipment can meet or exceed the specified performance and technical requirements are encouraged to quote a change in a SUBSTITUTE MATERIAL AND EQUIPMENT SCHEDULE and attach it to the Proposal.
- C. Bidders proposing to offer substitute material and equipment from an alternate manufacturer must write the alternate manufacturer's name and change in Base Bid Price in the appropriate spaces in the SUBSTITUTE MATERIAL AND EQUIPMENT SCHEDULE. The change in Base Bid Price should be written in the appropriate column for and addition (+) or a deduction (-) in price.
- D. The Owner will evaluate substitute material and equipment offerings of the low, responsive, responsible bidder after Notice of Award of the Contract has been made. The Contract amount will be the total of the original Base Bid Price adjusted as indicated in the SUBSTITUTE MATERIAL AND EQUIPMENT SCHEDULE for those substitute items accepted as equal by the Owner.
- E. On request of the Owner, the low responsive, responsible bidder shall submit an "Information Packet" for each substitute material and equipment item to demonstrate that each item is of equal type, function, and quality to the base bid item. The "Information Packet" shall meet the requirements of the Specifications for Show Drawing submittal and shall also contain other information as reasonably required by the Owner in performing his evaluation.
- F. The Owner shall be the sole authority for determining conformance of substitute materials and equipment with the Contract Documents. Under no circumstances will the Owner be required to prove that a substitute material or equipment item is not equal to the Base Bid item.
- G. Substitutions or modifications for material and equipment items will not be considered after receipt of the Bidder's Bid Proposal Form.

CONTRACT AWARD

The Bidder agrees that this Bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving Bids and understands that the Owner reserves the right to reject any or all Bids and to waive any informalities in the bidding.

The Contract will be awarded to the responsive, responsible Bidder submitting the lowest Bid complying with the conditions of the Information for Bidders. Award will be made on the basis of

the prices given in the base Bid either with or without alternates at the discretion of the Owner. The Bidder to whom the award is made will be notified at the earliest possible date.

A responsive Bidder shall be one who submits his Bid in the proper form without qualification or intent other than as called for in the Specifications and on the Contract Drawings and who binds himself on behalf of his Bid to the Owner with the proper bid bond or certified check completed and attached, and who properly completes all forms required to be completed and submitted at the time of the bidding.

Upon receipt of written notice of the acceptance of this Bid, Bidder will execute the formal contract attached within ten days and deliver a surety bond or bonds as required by the General Conditions. The Bid security attached in the sum of 5 percent of the total Bid is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

Respectfully submitted by:

By _____

(Signature)

Title _____

Business Address

ATTEST:

Name _____
(Please Type)

Title _____ (SEAL)

Note: Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

**BID SCHEDULE FOR UNIT PRICE
SECTION 0400
INSTALLATION OF WATER LINES AND APPURTENANCES**

CITY OF CALHOUN, GA.

DIVISION I - WATER SYSTEM IMPROVEMENTS

NOTE: Unless otherwise stated, all bid items shall be a complete installation as specified and/or shown on the detail and Unit Price shall include all Labor and Equipment necessary for installation of each item.

Item No.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	Contract Value
1	16" DIP WATER MAIN (3' COVER)	L.F.	500		
2	12" DIP WATER MAIN (3' COVER)	L.F.	80,000		
3	8" DIP WATER MAIN (3' COVER)	L.F.	20,000		
4	6" DIP WATER MAIN (3' COVER)	L.F.	5,000		
5	16" DIP WATER MAIN (3' TO 6' COVER)	L.F.	100		
6	12" DIP WATER MAIN (3' TO 6' COVER)	L.F.	700		
7	8" DIP WATER MAIN (3' TO 6' COVER)	L.F.	800		
8	6" DIP WATER MAIN (3' TO 6' COVER)	L.F.	800		
9	16" DIP RIVER CROSSING PIPE	L.F.	100		
10	12" DIP RIVER CROSSING PIPE	L.F.	100		
11	8" DIP RIVER CROSSING PIPE	L.F.	300		
12	16" GATE VALVE & BOX	EACH	4		
13	12" GATE VALVE & BOX	EACH	32		
14	8" GATE VALVE & BOX	EACH	16		
15	6" GATE VALVE & BOX	EACH	10		
16	FIRE HYDRANT ASSEMBLY	EACH	50		
17	FIRE HYDRANT VERTICAL EXT.	EACH	10		

Water System Improvements					
DIVISION I - WATER SYSTEM IMPROVEMENTS					

Item No.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	Contract Value
18	DUCTILE IRON FITTINGS	LB	10,000		
19	AIR RELEASE VALVE ASSEMBLY	EACH	10		
20	16" X 12" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
21	16" X 8" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
22	16" X 6" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
23	12" X 12" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
24	12" X 8" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
25	12" X 6" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
26	8" X 8" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
27	8" X 6" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
28	6" X 6" HOT TAP CONNECTION FOR DUCTILE IRON OR CAST PIPE	EACH	2		
29	16" X 12" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		

Water System Improvements					
DIVISION I - WATER SYSTEM IMPROVEMENTS					
Item No.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	Contract Value
30	16" X 8" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		
31	16" X 6" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		
32	12" X 12" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		
33	12" X 8" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		
34	12" X 6" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		
35	8" X 8" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		
36	8" X 6" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		
37	6" X 6" HOT TAP CONNECTION FOR PVC PIPE	EACH	2		
38	12" BLOW OFF ASSEMBLY	EACH	1		
39	8" BLOW OFF ASSEMBLY	EACH	1		
40	6" BLOW OFF ASSEMBLY	EACH	5		
41	4" BLOW OFF ASSEMBLY	EACH	1		
42	2" BLOW OFF ASSEMBLY	EACH	10		
43	CONCRETE ANCHOR FOR 16", 12", 8" & 6" PIPE AS PER DWG. NO. WATER-10	EACH	20		

Water System Improvements					
DIVISION I - WATER SYSTEM IMPROVEMENTS					
Item No.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	Contract Value
Unit Prices for the following bores shall be based on a minimum length of 20' per bore.					
44	16" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 6" Carrier Pipe and all Excavation of Bore Pits	L.F.	100		
45	20" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 8" Carrier Pipe and all Excavation of Bore Pits	L.F.	2000		
46	24" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 12" Carrier Pipe and all Excavation of Bore Pits	L.F.	500		
47	30" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 16" Carrier Pipe and all Excavation of Bore Pits	L.F.	100		
48	TEMPORARY 2" BLOW OFF ASSEMBLY	EACH	2		
49	TEMPORARY 6" BLOW OFF ASSEMBLY	EACH	2		
50	TIE TO EXISTING 16" MAIN (CUT-IN)	EACH	4		
51	TIE TO EXISTING 12" MAIN (CUT-IN)	EACH	6		
52	TIE TO EXISTING 8" MAIN (CUT-IN)	EACH	6		
53	TIE TO EXISTING 6" MAIN (CUT-IN)	EACH	4		
54	TIE TO EXISTING 4" MAIN (CUT-IN)	EACH	2		

INSTALLATION OF WATER LINES AND APPURTENANCES					
Water System Improvements					
DIVISION II - WATER SYSTEM IMPROVEMENTS					
Item No.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	Contract Value
1	TRANSPORT & INSTALL (Owner Supplied) CRUSHED STONE OR OTHER MATERIAL FOR SPECIAL BEDDING OR BACKFILL, ONLY IF DIRECTED BY OWNER	TON	400		
2	TRANSPORT & INSTALL(Contractor Supplied) CRUSHED STONE OR OTHER MATERIALFOR SPECIAL BEDDING OR BACKFILL, ONLY IF DIRECTED BY OWNER	TON	4000		
3	TRANSPORT & DISPOSE OF EXCESS OR UNSUITABLE MATERIAL FROM SITE, ONLY IF DIRECTED BY OWNER	C.Y.	2000		
4	DOT PAVEMENT REPLACEMENT AS PER GENERAL DETAIL DWG. NO. 2	L.F.	2,700		
5	LOCAL ROAD AND DRIVWAY PAVEMENT REPLACEMENT AS PER GENERAL DETAIL DWG. NO. 3	L.F.	2,000		
6	SIDEWALK REPLACEMENT	S.F.	100		
7	CONCRETE CURB & GUTTER REPLACEMENT	L.F.	100		

Water System Improvements					
DIVISION II - WATER SYSTEM IMPROVEMENTS					
Item No.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	Contract Value
8	CONCRETE INCASEMENT FOR WATER OR SEWER MAIN	C.Y.	50		
9	ROCK EXCAVATION	C.Y.	1,000		
10	EROSION CONTROL				
	TYPE "A" SILT FENCE	L.F.	25,000		
	TYPE "C" SILT FENCE	L.F.	500		
	TYPE "C-POP" SILT FENCE	L.F.	25,000		
	RIP-RAP (CONTRACTOR SUPPLIED)	S.Y.	500		
	TEMPORY GRASSING	L.F.	40,000		
	FINAL CLEAN-UP AND PERMANENT GRASSING	L.F.	90,000		
	8' WIDE ROLL OF EROSION CONTROL MATTING (Labor Only)	L.F.	500		
11	COMPACTED EARTH FILL MEASURED IN PLACE	C.Y.	1000		
12	CLEARING & GRUBBING	L.F.	25,000		
	CONTRACTOR SHALL FURNISH ALL LABOR AND EQUIPMENT NECESSARY FOR CLEARING AND GRUBBING				
CONTRACTOR SUPPLIED EQUIPMENT FOR SPECIAL PROJECTS RELATED TO OR NOT RELATED TO WATER LINE INSTALLATION					
13	EXCAVATOR (TRACKHOE)	PER/HR	24		
	45,000 LB. OPERATING WEIGHT OR EQUAL				
14	RUBBER TIRE BACKHOE	PER/HR	24		
	13,500 LB. OPERATING WEIGHT OR EQUAL				

Water System Improvements					
DIVISION II - WATER SYSTEM IMPROVEMENTS					
Item	DESCRIPTION	UNIT	EST. NO.	UNIT	Contract
15	TRACK DOZIER OR LOADER 17,500 LB. OPERATING WEIGHT OR EQUAL	PER/HR	24		
16	TANDEM DUMP TRUCK	PER/HR	24		
17	BOOM TRUCK 12,000 LB. LIFTING CAPACITY OR EQUAL	PER/HR	24		
18	Location Wire Testing Station as per General Detail Dwg.No. 4	EA	50		
19	2" HDPE Installed by Open Trench (0' to 6' Cover)	LF	15,000		
20	2" PVC Installed by Open Trench (0' to 6' Cover)	LF	1,000		
21	Water Service Line Installation INCLUDES CONNECTIONS TO THE MAIN, THE METER SETTER, THE CUSTOMER CUT-OFF, AND THE EXISTING CUSTOMER SERVICE LINE	EA	300		
22	2" Hot Tap to Existing Main	EA	100		
23	2" Gate Valve and Box	EA	100		
24	Cut & Plug Existing Main	EA	20		
25	STREAM CROSSING WITH DIKES AND BYPASS PUMPING (AS PER DETAIL)	LS	10		

Total Bid for Div. I (Water)	
-------------------------------------	--

BID SCHEDULE FOR UNIT PRICE
SECTION 0400
INSTALLATION OF SEWER LINES AND APPURTENANCES
CITY OF CALHOUN, GA.

DIVISION I - SEWER SYSTEM IMPROVEMENTS (BIDDER MUST COMPLETE DIVISION II)

NOTE: Unless otherwise stated, all bid items shall be a complete installation as specified and/or shown on the details and Unit Price shall include all Labor and Equipment necessary for installation of each item.

ITEM NO.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	ITEM TOTAL
1	STANDARD PRE-CAST MANHOLE (Base, Risers and Cone)				
	4ft Dia. 0-6 ft. Cut	EACH	10		
	4ft Dia. 6-8 ft. Cut	EACH	25		
	4ft Dia. 8-10 ft. Cut	EACH	25		
	4ft Dia. 10-12 ft. Cut	EACH	10		
	4ft Dia. 12-14 ft. Cut	EACH	5		
	4ft Dia. 14-16 ft. Cut	EACH	2		
	4ft Dia. 16-18 ft. Cut	EACH	1		
	4ft Dia. 18-20 ft. Cut	EACH	1		
	4ft Dia. 20-22 ft. Cut	EACH	1		
2	MANHOLE FRAME AND COVERS				
	STANDARD	EACH	50		
	WATER-TIGHT	EACH	12		
3	INSTALL INVERT CHANNEL IN MANHOLE		EACH	62	
4	24" DIP GRAVITY SEWERS				
	0-6ft Cut	L.F.	200		
	6-8ft Cut	L.F.	200		
	8-10ft Cut	L.F.	200		
	10-12ft Cut	L.F.	200		
	12-14ft Cut	L.F.	200		
	14-16ft Cut	L.F.	200		
	16-18ft Cut	L.F.	100		
	18-20ft Cut	L.F.	100		
	20-22ft Cut	L.F.	100		

5	18" DIP GRAVITY SEWERS				
	0-6ft Cut	L.F.	200		
	6-8ft Cut	L.F.	200		
	8-10ft Cut	L.F.	200		
	10-12ft Cut	L.F.	200		
	12-14ft Cut	L.F.	200		
	14-16ft Cut	L.F.	200		
	16-18ft Cut	L.F.	100		
	18-20ft Cut	L.F.	100		
	20-22ft Cut	L.F.	100		
6	16" DIP GRAVITY SEWERS				
	0-6ft Cut	L.F.	100		
	6-8ft Cut	L.F.	100		
	8-10ft Cut	L.F.	100		
	10-12ft Cut	L.F.	100		
	12-14ft Cut	L.F.	100		
	14-16ft Cut	L.F.	100		
	16-18ft Cut	L.F.	100		
	18-20ft Cut	L.F.	100		
	20-22ft Cut	L.F.	100		
7	12" DIP GRAVITY SEWERS				
	0-6ft Cut	L.F.	500		
	6-8ft Cut	L.F.	500		
	8-10ft Cut	L.F.	500		
	10-12ft Cut	L.F.	500		
	12-14ft Cut	L.F.	500		
	14-16ft Cut	L.F.	200		
	16-18ft Cut	L.F.	200		
	18-20ft Cut	L.F.	200		
	20-22ft Cut	L.F.	200		
8	8" DIP GRAVITY SEWERS				
	0-6ft Cut	L.F.	100		
	6-8ft Cut	L.F.	200		
	8-10ft Cut	L.F.	400		
	10-12ft Cut	L.F.	400		
	12-14ft Cut	L.F.	200		
	14-16ft Cut	L.F.	100		
	16-18ft Cut	L.F.	100		
	18-20ft Cut	L.F.	100		
	20-22ft Cut	L.F.	100		

9	12" PVC SDR 26 GRAVITY SEWERS				
	0-6ft Cut	L.F.	100		
	6-8ft Cut	L.F.	500		
	8-10ft Cut	L.F.	2500		
	10-12ft Cut	L.F.	200		
	12-14ft Cut	L.F.	200		
	14-16ft Cut	L.F.	200		
	16-18ft Cut	L.F.	200		
	18-20ft Cut	L.F.	200		
	20-22ft Cut	L.F.	200		
10	10" PVC SDR 26 GRAVITY SEWERS				
	0-6ft Cut	L.F.	100		
	6-8ft Cut	L.F.	100		
	8-10ft Cut	L.F.	100		
	10-12ft Cut	L.F.	100		
	12-14ft Cut	L.F.	100		
	14-16ft Cut	L.F.	100		
	16-18ft Cut	L.F.	100		
	18-20ft Cut	L.F.	100		
	20-22ft Cut	L.F.	100		
11	8" PVC SDR 26 GRAVITY SEWERS				
	0-6ft Cut	L.F.	800		
	6-8ft Cut	L.F.	1000		
	8-10ft Cut	L.F.	2500		
	10-12ft Cut	L.F.	1000		
	12-14ft Cut	L.F.	400		
	14-16ft Cut	L.F.	200		
	16-18ft Cut	L.F.	200		
	18-20ft Cut	L.F.	200		
	20-22ft Cut	L.F.	200		
12	12" OUTSIDE VERTICAL DROP	V.F.	10		
13	10" OUTSIDE VERTICAL DROP	V.F.	10		
14	8" OUTSIDE VERTICAL DROP	V.F.	20		
15	18" X 4" or 18" x 6" Wye or Tee	EACH	2		
16	16" X 4" or 16" x 6" Wye or Tee	EACH	2		
17	12" X 4" or 12" x 6" Wye or Tee	EACH	20		
18	8" X 4" or 8" x 6" Wye or Tee	EACH	40		
19	4" House Service Lateral In Street R/W	L.F.	1,000		
	(includes connection to the existing customer piping)				

20	4" House Service Lateral Outside R/W or In Easement	L.F.	600		
	(includes connection to the existing customer piping)				
21	6" House Service Lateral In Street R/W	L.F.	200		
	(includes connection to the existing customer piping)				
22	6" House Service Lateral Outside R/W or In Easement	L.F.	600		
	(includes connection to the existing customer piping)				
23	4" or 6" Clean-out on 4" or 6" PIPE	EACH	20		
24	CORE DRILL 4" or 6" PIPE CONNECTION into MH or Structure	EACH	10		
25	CORE DRILL 8" PIPE CONNECTION into MH or Structure	EACH	10		
26	CORE DRILL 12" PIPE CONNECTION into MH or Structure	EACH	5		
27	CORE DRILL 16" PIPE CONNECTION into MH or Structure	EACH	2		
28	CORE DRILL 18" PIPE CONNECTION into MH or Structure	EACH	2		
Unit Prices shall be Based on a minimum length of 20' per bore.					
29	20" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 8" Carrier Pipe and all Excavation of Bore Pits, 0' to 8' Cut.	L.F.	200		
30	20" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 10" Carrier Pipe and all Excavation of Bore Pits, 0' to 8' Cut.	L.F.	100		
31	24" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 12" Carrier Pipe and all Excavation of Bore Pits, 0'to 8' Cut.	L.F.	200		
32	30" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 16" Carrier Pipe and all Excavation of Bore Pits, 0'to 8' Cut.	L.F.	40		

33	36" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 24" Carrier Pipe and all Excavation of Bore Pits, 0'to 8' Cut.	L.F.	80		
34	20" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 8" Carrier Pipe and all Excavation of Bore Pits, 8' to 16' Cut.	L.F.	40		
35	20" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 10" Carrier Pipe and all Excavation of Bore Pits, 8' to 16' Cut.	L.F.	40		
36	20" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 8" Carrier Pipe and all Excavation of Bore Pits, 18' to 24' Cut.	L.F.	40		
37	24" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 12" Carrier Pipe and all Excavation of Bore Pits, 8' to 16' Cut.	L.F.	40		
38	30" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 16" Carrier Pipe and all Excavation of Bore Pits, 8' to 16' Cut.	L.F.	40		
39	36" STEEL CASING BY JACK & BORE Unit Price to Include Installing Spacers, 24" Carrier Pipe and all Excavation of Bore Pits, 8' to 16' Cut.	L.F.	40		
40	INSTALL 8' DIAMETER WETWELL AS PER DETAIL				
	10-14 ft. Cut	EACH	1		
	14-18 ft. Cut	EACH	2		
	18-22 ft. Cut	EACH	3		
	22-26 ft. Cut	EACH	2		
	26-30 ft. Cut	EACH	1		

41	INSTALL SUBMERSIBLE PUMPS IN WETWELL AS PER DETAIL	EACH	8		
42	INSTALL VALVE PIT & PIPING FROM WETWELL AS PER DETAIL	EACH	4		
43	INSTALL 4" PVC FORCEMAIN				
	3' of Cover	L.F.	5,000		
	3' to 6' of Cover	L.F.	500		
44	INSTALL 6" PVC FORCEMAIN				
	3' of Cover	L.F.	5,000		
	3' to 6' of Cover	L.F.	500		
45	INSTALL 8" PVC FORCEMAIN				
	3' of Cover	L.F.	2,500		
	3' to 6' of Cover	L.F.	2,000		
46	INSTALL 6" DIP FORCEMAIN				
	3' of Cover	L.F.	500		
	3' to 6' of Cover	L.F.	500		
47	INSTALL 8" DIP FORCEMAIN				
	3' of Cover	L.F.	500		
	3' to 6' of Cover	L.F.	500		
48	AIR RELIEF VALVE ASSEMBLY	EACH	6		

**BID SCHEDULE FOR UNIT PRICE
SECTION 0400
DIVISION II - MISCELLANEOUS (MUST BE COMPLETED)**

CITY OF CALHOUN, GA.

NOTE: Unless otherwise stated, all bid items shall be a complete installation as specified and/or shown on the details and Unit Price shall include all Labor and Equipment necessary for installation or execution of each item.

ITEM NO.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	ITEM TOTAL
1	TRANSPORT & INSTALL (Owner Supplied) CRUSHED STONE OR OTHER MATERIAL FOR SPECIAL BEDDING OR BACKFILL, ONLY IF DIRECTED BY OWNER	TON	400		
2	TRANSPORT & INSTALL(Contractor Supplied) CRUSHED STONE OR OTHER MATERIAL FOR SPECIAL BEDDING OR BACKFILL, ONLY IF DIRECTED BY OWNER	TON	4000		
3	TRANSPORT & DISPOSE OF EXCESS OR UNSUITABLE MATERIAL FROM SITE, ONLY IF DIRECTED BY OWNER	C.Y.	200		
4	DOT PAVEMENT REPLACEMENT AS PER GENERAL DETAIL DWG. No. 2	L.F.	240		
5	PUBLIC ROAD AND DRIVWAY PAVEMENT REPLACEMENT AS PER GENERAL DETAIL DWG. No. 3	L.F.	240		
6	SIDEWALK REPLACEMENT	S.F.	100		
7	CONCRETE CURB & GUTTER REPLACEMENT	L.F.	100		
8	CONCRETE INCASEMENT FOR WATER OR SEWER MAIN	C.Y.	50		
9	ROCK EXCAVATION	C.Y.	1000		

10	EROSION CONTROL				
	TYPE "A" SILT FENCE	L.F.	10,000		
	TYPE "C" SILT FENCE	L.F.	25,000		
	TYPE "C-POP" SILT FENCE	L.F.	5,000		
	RIP-RAP (CONTRACTOR SUPPLIED)	S.Y.	500		
	TEMPORY GRASSING	L.F.	40,000		
	FINAL CLEAN-UP AND PERMANENT GRASSING	L.F.	90,000		
11	COMPACTED EARTH FILL MEASURED IN PLACE	C.Y.	500		
12	CLEARING & GRUBBING	L.F.	25,000		
	CONTRCTOR SHALL FURNISH ALL LABOR AND EQUIPMENT NECESSARY FOR CLEARING AND GRUBBING				
13	STREAM CROSSING WITH DIKES AND BYPASS PUMPING (AS PER DETAIL)	LS	5		
CONTRACTOR SUPPLIED EQUIPMENT FOR SPECIAL PROJECTS RELATED TO OR NOT RELATED TO WATER LINE INSTALLATION					
14	EXCAVATOR (TRACKHOE)	PER/HR.	24		
	45,000 LB. OPERATING WEIGHT OR EQUAL				
15	RUBBER TIRE BACKHOE	PER/HR.	24		
	13,500 LB. OPERATING WEIGHT OR EQUAL				
16	TRACK DOZIER OR LOADER	PER/HR.	24		
	17,500 LB. OPERATING WEIGHT OR EQUAL				
17	TANDEM DUMP TRUCK	PER/HR.	24		
18	BOOM TRUCK	PER/HR.	24		
	12,000 LB. LIFTING CAPACITY OR EQUAL				

Total Bid for Div. II (Sewer)	
--------------------------------------	--

**BID SCHEDULE FOR UNIT PRICE
SECTION 0400
DIVISION III - DIRECTIONAL BORING (MUST BE COMPLETED)**

CITY OF CALHOUN, GA.

NOTE: Unless otherwise stated, all bid items shall be a complete installation as specified and/or shown on the details and Unit Price shall include all Labor and Equipment necessary for installation or execution of each item.

ITEM NO.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	ITEM TOTAL
1	2" HDPE INSTALLED BY DIRECTIONAL BORING	L.F.	1000		
2	6" HDPE INSTALLED BY DIRECTIONAL BORING	L.F.	1000		
3	8" HDPE INSTALLED BY DIRECTIONAL BORING	L.F.	1000		
4	12" HDPE INSTALLED BY DIRECTIONAL BORING	L.F.	1000		
5	6" DIP INSTALLED BY DIRECTIONAL BORING	L.F.	800		
6	8" DIP INSTALLED BY DIRECTIONAL BORING	L.F.	500		
7	12" DIP INSTALLED BY DIRECTIONAL BORING	L.F.	500		
8	BUTT FUSE HDPE FITTINGS TO DIP SOLID SLEEVE (AT TRANSITION TO OTHER PIPE MATERIAL)	EA	300		
9	6"x 6"x 6" ELECTRO-FUSE TEE ASSEMBLY	EA	100		
10	6" ELECTRO-FUSE BEND ASSEMBLY	EA	500		
11	6" ELECTRO-FUSE COUPLING ASSEMBLY	EA	200		
12	8"x 8"x 8" ELECTRO-FUSE TEE ASSEMBLY	EA	100		
13	8" ELECTRO-FUSE BEND ASSEMBLY	EA	500		
14	8" ELECTRO-FUSE COUPLING ASSEMBLY	EA	200		
15	12"x 12"x 12" ELECTRO-FUSE TEE ASSEMBLY	EA	50		
16	12" ELECTRO-FUSE BEND ASSEMBLY	EA	300		
17	12" ELECTRO-FUSE COUPLING ASSEMBLY	EA	200		

DIVISION III - DIRECTIONAL BORING

Item No.	DESCRIPTION	UNIT	EST. NO. OF UNITS	UNIT PRICE	Contract Value
18	12"x 2" ELECTRO-FUSE BRANCH SADDLE	EA	10		
19	8"x 2" ELECTRO-FUSE BRANCH SADDLE	EA	20		
20	6"x 2" ELECTRO-FUSE BRANCH SADDLE	EA	20		
21	6"x 3/4" ELECTRO-FUSE SERVICE SADDLE	EA	50		
22	6"x 1" ELECTRO-FUSE SERVICE SADDLE	EA	30		
23	8"x 3/4" ELECTRO-FUSE SERVICE SADDLE	EA	40		
24	8"x 1" ELECTRO-FUSE SERVICE SADDLE	EA	15		
25	2" ELECTRO-FUSE COUPLING	EA	15		
26	2" HDPE TO MALE THREADED BUTT FUSE ADAPTER	EA	15		

Total Bid for Div. III

Grand Total Bid for Div. I & Div. II & Div. III

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,
_____ as Principal,
and _____ as
Surety, are hereby held and firmly bound unto the City of Calhoun as Owner in the penal sum of
five percent of the total Bid which for the payment of which, well and truly to be made, we
hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors,
and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the
City of Calhoun a certain Bid, attached hereto and hereby made a part hereof to enter into a
contract in writing for the construction of the City of Calhoun, Georgia, **2020 Annual Unit Price
Contract for the Installation of Water and Sewer Lines.**

NOW, THEREFORE,

If said Bid shall be rejected, or in the alternate,
If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form
of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish
materials in connection therewith, and shall in all other respects perform the agreement created
by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall
remain in force and effect; it being expressly understood and agreed that the liability of the
Surety for any and all claims hereunder shall in no event exceed the penal amount of this
obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety
and its bond shall be in no way impaired or affected by any extension of the time within which
the Owner may accept such Bid; and said Surety does hereby waive notice of any such
extension.

IN WITNESS WHEREOF, the Principal and Surety have executed this bond by causing their respective names to be hereunto subscribed and their seals to be hereunto affixed by their duly authorized officers, on this the ____ day of _____, 202__.

CONTRACTOR -PRINCIPAL:

By_____

Name_____

(Please Type)

Title_____

ATTEST:

Name_____

(Please Type)

Title_____

(SEAL)

Note: Attest for a Corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

SURETY:

By_____

Name_____

Title_____

ATTEST:

Name_____

(Please Type)

Title_____

(SEAL)

Note: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

PARTNERSHIP CERTIFICATE

STATE OF _____

COUNTY OF _____

On this _____ day of _____, 20____, before me personally appeared _____, known to me to be the person who executed the above instrument, who, being by me first duly sworn, did depose and say that he is a general partner in the firm of _____ and that said firm consists of himself and _____ and that he executed the foregoing instrument on behalf of said firm for the uses and purposes stated therein, and that no one except the above named members of the firm have any financial interest whatsoever in said proposed contract.

Partner

Partner

Partner

Partner

Subscribed and sworn to before me, this _____ day of _____, 20____,

Notary Public

My Commission Expires:

(Date) _____

(SEAL)

NOTE: If only one partner signs, a power of attorney executed by all other partners authorizing him to act in the name of the company must be attached; otherwise, all partners must sign.

CORPORATE CERTIFICATE

I, _____, certify that I am the Secretary of the corporation named as Contractor in the foregoing proposal; that _____, who signed said proposal in behalf of the Contractor was then _____ of said corporation; that said proposal was duly signed for and in behalf of said corporation by authority of its Board of Directors, and is within the scope of its corporate powers; that said corporation is organized under the laws of the State of _____.

This _____ day of _____, 20__.

(SEAL)

NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____

County of _____

_____, being first duly sworn, deposes and says that:

1 .He is _____ of _____
(owner, partner, officer, representative, or agent)

the Bidder that has submitted the attached Bid;

2. He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid.

3. Such Bid is genuine and is not a collusive or sham Bid;

4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the _____ (Local Public Agency) or any person interested in the proposed Contract; and

5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

Title

Subscribed and sworn to before me this _____ day of _____, 20__.

Title

My commission expires _____

(Date)

(SEAL)

NONCOLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of _____

County of _____

_____, being first duly sworn, deposes and says that:

1. He is of _____

of _____

(owner, partner officer, representative, or agent)

_____, hereinafter referred to as the "Subcontractor;"

2. He is fully informed respecting the preparation and contents of the Subcontractor's Proposal submitted by the Subcontractor to _____, the Contractor for certain work in connection with the _____ Contract pertaining to the Project

In _____ (City or County, and State);

3. Such Subcontractor's Proposal is genuine and is not a collusive or sham Proposal;

4. Neither the Subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Proposal in connection with such Contract or to refrain from submitting a proposal in connection with such Contract, or has in any manner, directly or indirectly, sought by unlawful agreement or connivance with any other Bidder, firm or person to fix the price or prices in said Subcontractor's Proposal, or to secure through collusion, conspiracy, connivance or unlawful agreement any advantage against the _____

(Local Public Agency) or any person interested in the proposed Contract; and

5. The price or prices quoted in the Subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

Title

Subscribed and sworn to before me this _____ day of _____, 20__.

Title

My commission expires _____

(Date)

(SEAL)

STATEMENT OF LICENSE CERTIFICATE

Each Contractor bidding shall fill in and sign the following:

This is to certify that _____

has fully complied with all the requirements of the Georgia State Construction Industry Licensing Board Laws and Rules. The Contractor's license number, other information outlined in the Instructions for Bidders, expiration date, and that part of classification applying to the Bid shall appear on the envelope containing the Bid; otherwise the Bid will not be considered.

The Georgia State Construction Industry Licensing Board issued to _____

Certificate No. _____ which expires on _____.

Signed _____

Name _____

Title _____

CONTRACT

THIS CONTRACT, made this _____ day of _____ 20____, by and between the City of Calhoun, hereinafter called "Owner" and _____, an Individual, hereinafter called "Contractor".

WITNESSETH: That for and in consideration of the payments and agreements hereafter mentioned:

- 1 .The Contractor will commence and complete the construction of the **2020 Annual Unit Price Contract for the Installation of Water and Sewer Lines**, City of Calhoun, Georgia.

2. The Contractor will furnish all of the tools, equipment, labor and other services necessary for the completion of the work described herein.

3. The Work to be performed under this contract will consist of one or more projects to be described in individual Work Orders to be issued by the Owner. Each such project shall commence on a date specified in the Work Orders and be completed. The Contractor will commence the work required by the Work Order within 30 calendar days after the issuance of the Work Order and will complete the work by a date specified in the Work Order unless the periods of completion are extended otherwise by the Contract Documents.

All time limits stated in the individual Work Orders shall be determined by mutual agreement and are of the essence of the Agreement. CONTRACTOR and OWNER agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER \$250 for each day that expires after the Time specified for completion for any individual Work Order until the work is completed for that Work Order. The CONTRACTOR shall be under no obligation to accept any Work Order containing an unreasonable Time of completion or date of commencement.

4. The Work to be performed under this contract will consist of one or more projects to be described in individual Work Orders to be issued by the Owner. OWNER shall pay CONTRACTOR for performance of the work the sum of _____ Dollars (\$_____) (the "Contract Sum") which is the total of unit prices bid for the quantities in the Bid. This bid quantities are approximate and may be deleted, increased, or decreased as to any and all units as necessary to complete the construction without entitling the Contractor to any claim

for extra compensation because of any injury, damage or delay he may sustain on account of such increase or decrease. The Contractor shall be entitled to compensation on the basis of unit prices only on the quantities of materials furnished by the City and actually installed by the Contractor as determined by the OWNER through inspection of the work.

This Contract shall be valid for one year unless extended for up to three additional years by mutual agreement between both parties. Bid unit prices may be adjusted during the extended years to offset inflated costs based on the Construction Cost Index published in the Engineering News-Record.

5. The term "Contract Documents" means and includes the following:

- a. Advertisement for Bids
- b. Information for Bidders
- c. Bid
- d. Bid Bond
- e. Contract
- f. General Conditions
- g. Supplemental General Conditions
- h. Payment Bond
- i. Performance Bond
- j. Notice of Award
- k. Notice to Proceed
- l. Change Order(s)
- m. Drawings
- n. Specifications
- o. Addenda:
 - No. 1, dated September 18, 2013
 - No. _____, dated _____, 20__
 - No. _____, dated _____, 20__

6. The Owner will pay to the Contractor in the manner and at such times as set forth in the General Conditions such amounts as required by the Contract Documents.

7. This Contract shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Contract in four (4) copies each of which shall be deemed an original on the date first above written.

OWNER:

CITY OF CALHOUN

By _____

Name James F. Palmer

(Please Print or Type)

Title Mayor

WITNESS:

Name _____

(Please Print or Type)

Title _____

(SEAL)

CONTRACTOR:

By _____

Name _____

(Please Print or Type)

Address: _____

ATTEST:

Name _____

(Please Print or Type)

Title _____

(SEAL)

Note: Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that _____

(Name and Address of Contractor)

of the State of _____, a Corporation, a Partnership, or an Individual the "Principal," and

_____, the "Surety,"
(Name and Address of Surety)

are held and firmly bound unto the City of Calhoun (the "Owner"), existing under and by virtue of the laws of the State of Georgia, in the sum of _____ (\$ _____) in lawful money of the United States, for the payment of which sum in lawful money of the United States well and truly to be made we do hereby bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally.

The condition of this obligation is such that whereas Principal has entered into a certain Contract with the Owner, dated as of the _____ day of _____, 20____, which is by reference incorporated in and made a part hereof as fully as if copied here verbatim, for the construction of the City of Calhoun, Georgia, **2020 Annual Unit Price Contract for the Installation of Water and Sewer Lines.**

NOW, THEREFORE, if the Principal shall in all respects comply with and perform all the terms and conditions of the Contract (which includes the Drawings, Specifications, and Contract Documents) and such alterations as may be made in said contract as the documents therein provide for, during the original term thereof and any extensions thereof which may be granted by the Owner, with or without notice to Surety, and during the one-year warranty period, and if Principal shall satisfy all claims and demands and shall indemnify and save harmless the Owner against and from all costs, expenses, damages, injury, or conduct, want of care, skill, negligence, or default, including compliance with performance guarantees and patent infringement by the Principal, then this obligation shall be void; otherwise Principal and Surety jointly and severally agree to pay to Owner any difference between the sum to which the Principal would be entitled on completion of the contract and that which the Owner may be obliged to pay for the completion of the work by contract or otherwise, together with any damages, direct or indirect, or consequential, which Owner may sustain on account of such work, or on account of the failure of the Principal to keep and execute all provisions of the Contract.

Principal and Surety further bind themselves, their heirs, executors, administrators, and assigns, jointly and severally, that if the Principal shall keep and perform its

agreement to repair or replace defective work or equipment during the warranty period of one (1) year as provided, then this paragraph shall be void; but if default shall be made by Principal in the performance of its contract to so repair or replace said work, then this paragraph shall be in effect and Owner shall have and recover from Principal and its Surety damages for all defective conditions arising by reason of defective materials, work, or labor performed by or on the account of Principal and it is further understood and agreed that this obligation shall be a continuing one against the Principal and Surety hereon, and that successive recoveries may be had hereon for successive breaches until the full amount shall have been exhausted; and it is further understood that the obligation therein to maintain said work shall continue throughout said maintenance period, and the same shall not be changed, diminished, or in any manner affected from any cause during said time; and to fully save and hold the Owner harmless for any damages it may be caused to pay on account of injury to person, loss of life or damage to property.

And the Surety, for value received, hereby stipulates and agrees that the obligations of the Surety and this Bond shall in no way be impaired or affected by any extension of time, modification, omission, addition, or change in or to the contract, the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provision thereof, or by any assignment subletting or other transfer thereof, or of any part thereof, of any work to be performed, or of any moneys due to become due thereunder; and the said Surety does hereby waive notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts, and transfer, and hereby stipulates and agrees that any and all things done and omitted to be done by and in relation to executors, administrators, successors, assignees, subcontractors, and other transferees shall have the same effect as to said Surety as though done or omitted to be done by and in relation to the Principal.

IN WITNESS WHEREOF, the Principal and Surety have executed this Bond by causing their respective names to be hereunto subscribed and their seals to be hereunto affixed by their duly authorized officers, on this the _____ day of _____, 20__.

CONTRACTOR -PRINCIPAL:

By _____

Name _____
(Please Print or Type)

Title _____

ATTEST:

Name _____

Title _____

(SEAL)

Note: Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

SURETY:

By _____

Name _____
(Please Print or Type)

Title _____

Witness:

Name _____
(Please Print or Type)

Title _____

(SEAL)

Note: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

that _____

(Name and Address of Contractor)

a Corporation, a Partnership, or an Individual _____ of the

State _____, the "Principal," and _____,

the "Surety,"
(Name and Address of Surety)

are held and firmly bound unto the City of Calhoun {the "Owner"} existing under and by virtue of the laws of the State of Georgia, in the sum of _____

(\$ _____) in lawful money of the United States, for the payment of which sum in lawful money of the United States well and truly to be made we do hereby bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally.

The condition of this obligation is such that whereas Principal has entered into a certain Contract with the Owner, dated as of the _____ day of _____, 20____, which is by reference incorporated in and made a part hereof as fully as if copied here verbatim, for the construction of the City of Calhoun, Georgia, **2020 Annual Unit Price Contract for the Installation of Water and Sewer Lines.**

NOW, THEREFORE, if the Principal shall fully pay for all the labor and materials used by said Principal or any immediate or remote subcontractor or furnisher of labor or materials under him in the performance of the work in lawful money of the United States as the same shall become due, including all amounts due for materials, lubricants, oil, gasoline, electricity, coal and coke, repairs on machinery, equipment, and tools, consumed or used in connection with performance of the work and all insurance premiums and other charges incurred under said contract, then this obligation shall be void; otherwise to remain in full force and effect.

Principal and Surety further bind themselves, their heirs, executors, administrators, and assigns, jointly and severally, that they shall promptly make payments of all taxes, licenses, assessments, contributions, penalties, and interest thereon, when, and if, the same may be lawfully due the State of Georgia, or any County, Municipality, or political subdivision thereof by reason of and directly connected with the performance of the Contract, or any part thereof.

And the Surety, for value received, hereby stipulates and agrees that the obligations of the Surety and this Bond shall in no way be impaired or affected by any extension of time, modification, omission, addition, or change in or to the contract, the work to be performed there under, or by any payment there under before the time required therein, or by any waiver of any provision thereof, or by any assignment subletting or other transfer thereof, or of any part thereof, of any work to be performed, or of any moneys due to become due thereunder; and the said Surety does hereby waive notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts, and transfer, and hereby stipulates and agrees that any and all things done and omitted to be done by and in relation to executors, administrators, successors, assignees, subcontractors, and other transferees shall have the same effect as to said Surety as though done or omitted to be done by and in relation to the Principal.

IN WITNESS WHEREOF, the Principal and Surety have executed this Bond by causing their respective names to be hereunto subscribed and their seals to be hereunto affixed by their duly authorized officers, on this the ____ day of _____, 20__.

CONTRACTOR -PRINCIPAL:

By _____

Name _____
(Please Print or Type)

Title _____

ATTEST: _____

Name _____
(Please Print or Type)

Title _____

(SEAL)

Note: Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

SURETY: _____

By _____

Name _____
(Please Print or Type)

Title _____

WITNESS:

Name _____
(Please Print or Type)

Title _____

(SEAL)

Note: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located .

CHANGE ORDER

Order No. _____

Date: _____

Agreement Date: _____

NAME OF PROJECT: _____

OWNER: City of Calhoun

CONTRACTOR: _____

The following changes are hereby made to the Contract Documents:

Change to Contract Price

Original Contract Price \$ _____

Current Contract Price adjusted by previous Change Order \$ _____

The Contract Price due to this Change Order will be \$ _____

Increased / decreased by:

The new Contract Price including this Change Order will be \$ _____

Change to Contract Time

The Contract Time will be increased / decreased by _____ calendar days.

The date for completion of all work will be _____ (date).

Justification

Approvals Required:

To be effective this Order must be approved by the Federal agency if it changes the scope or objective of the Project, or as may otherwise be required by the Supplemental General Conditions.

Accepted by: _____ (Contractor)

Recommended by: _____ (City of Calhoun, Engineering Department)

Ordered by: _____ (Owner)

Funding Agency Approval {where applicable}: _____

NOTICE OF AWARD

To:

Project Description: **2020 Annual Unit Price Contract for the Installation of Water and Sewer Lines**

The Owner has considered the Bid submitted by you for the above described work in response to its Advertisement for Bids dated _____, 20__ and Information for Bidders.

You are hereby notified that your bid has been accepted in the amount of \$_____.

You are required by the Information for Bidders to execute the Contract and furnish the required Contractor's certificates of insurance within ten calendar days from the date of this notice to you.

If you fail to execute said Contract within ten days from the date of this notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your bid as abandoned and as a forfeiture of your Bid Bond will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Owner.

Dated this ____ day of _____, 20__.

City of Calhoun (Owner)

By _____

Name _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by _____,

this the _____ day of _____, 20__.

By _____

Name _____

Title _____

2020 ANNUAL UNIT PRICE CONTRACT FOR THE INSTALLATION OF WATER AND SEWER LINES

NOTICE TO PROCEED WITH WORK ORDER

To: _____

WORK ORDER #: _____

Description of the Work:

You are hereby notified to commence work in accordance with the Contract dated _____, 20__, on or before _____, 20__, and you are to complete the work within _____ consecutive calendar days thereafter. The date of completion of all work is therefore _____, 20__.

Dated this _____ day of _____ 20__.

City of Calhoun (Owner)

By _____

Name _____

Title _____

ACCEPTANCE OF WORK ORDER NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged by

_____ this the _____ day of _____ 20__.

By _____

Name _____

Title _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project: **2020 Annual Unit Price Contract for the Installation of Water and Sewer**

Agreement Date: _____

Contractor: _____

Owner: City of Calhoun
700 W. Line Street
Calhoun, GA 30701

A walk-through inspection of the project was conducted on _____, 20__, with representatives of the Contractor, Owner, and Engineer participating. A final Punch List of work remaining to be completed or deficiencies noted was prepared.

ENGINEER: The work performed under this contract has been reviewed and found to the Engineer's best knowledge, information, and belief to be substantially complete as of

_____.

By: _____ Title: _____

Date: _____

CONTRACTOR: The Contractor will complete or correct all work noted on the list of remaining work items dated _____, and supplements issued thereto within -days of the substantial completion date unless time is extended by Owner. The failure to include any items on the list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.

By: _____ Title: _____

Date: _____

OWNER: The Owner accepts the work as substantially complete and accepts full possession thereof including the responsibilities for security, maintenance, and Insurance.

By: _____ Title: _____

Date: _____

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, _____ the duly authorized and acting legal representative of the City of Calhoun, do hereby certify as follows:

I have examined the attached contract and the manner of execution thereof, and I am of the opinion that the aforesaid agreement is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreement on behalf of the respective parties named thereon; and that the foregoing agreement constitutes valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof .

Date: _____

SECTION 03000 - PROJECT CLOSEOUT

PART 1 -GENERAL

1.1 SUMMARY

A. *This section* specifies administrative and procedural requirements for project closeout, including but not limited to:

1. Inspection procedures.
2. Project record document submittal.
3. Operating and maintenance manual submittal. 4. Submittal of warranties. 5. Final cleaning.

B. *Closeout* requirements for specific construction activities are included in the appropriate sections in Divisions 2 through 16.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplemental Conditions or General Provisions and Other Division 1 specification sections, apply to this section.

1.3 SUBSTANTIAL COMPLETION

A. *Preliminary Procedures.* Before requesting inspection for certification of substantial completion, complete the following. List exceptions in the request.

1. *Advise* Owner of pending insurance change-over requirements.
2. *Complete start-up testing* of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
3. *Complete final clean up* requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

- B. *Inspection Procedures.* On receipt of a request for inspection, the City of Calhoun, Engineering Inspection Department will either proceed with inspection or advise the Contractor of unfulfilled requirements. The City of Calhoun, Engineering Department will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The City of Calhoun, Engineering Inspection Department will repeat inspection when requested and assured that the work has been substantially completed.

2. Results of the completed inspection will form the basis of requirements for substantial completion.

- C. *Reinspection Procedure.* The City of Calhoun, Engineering Inspection Department will reinspect the work upon receipt of notice that the work, including inspection list items from earlier inspections, has been completed, except items whose completion has been

delayed because of circumstances acceptable to the City of Calhoun, Engineering Inspection Department .

1. Upon completion of reinspection, the City of Calhoun, Engineering Department will prepare a certificate of final acceptance or advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, reinspection will be repeated.

1.4 FINAL ACCEPTANCE

Preliminary Procedures. Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the contract sum.
3. Submit a certified copy of the City of Calhoun, Engineering Inspection Department's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and the list has been endorsed and dated by the City of Calhoun, Engineering Department.
4. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
5. Obtain and submit releases enabling the Owner unrestricted use of the work and access to services and utilities; include occupancy permits, operating certificates, and similar releases.
6. Submit record drawings, final project photographs, damage or settlement survey, property survey, and similar final record information.
7. Deliver any specified tools, spare parts, extra stock, and similar items.
8. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change -over in security provisions.
9. Submit all project close-out forms completed and executed.
10. Submit operation and maintenance data.
11. Submit spare parts list.
12. Submit project record drawings (mark-up of plans showing revisions during construction)
13. Submit a final liquidated damages settlement statement, if required.
14. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

PART 2 -PRODUCTS (Not Applicable)

PART 3 -EXECUTION

3.1 CLOSEOUT PROCEDURES

A. *Operating and Maintenance Instructions.* Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.
7. Identification systems
8. Control sequences.
9. Hazards.
10. Cleaning.
11. Warranties and bonds.
12. Maintenance agreements and similar continuing commitments.

B. *A list of available instruction dates* shall be submitted to the Owner through the City of Calhoun, Engineering Inspection Department at least two weeks in advance of the earliest proposed date for each instruction program. The City of Calhoun, Engineering Inspection Department will, within three business days, notify the Contractor of the Owner's preferred date. To the maximum extent possible, instruction of related equipment systems will be conducted concurrently. The final coordination of the instruction is the sole responsibility of the Contractor.

C. *Demonstrate the following procedures* as part of instruction for operating equipment.

1. Start-up.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

3.2 FINAL CLEANING

A. *General.* General cleaning during construction is required by the General Conditions.

B. *Cleaning.* Employ experienced workers or professional cleaners for final cleaning. Clean all work areas to original condition or to satisfaction of Owner and City of Calhoun, Engineering Inspection Department.

Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.

Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

C. *Removal of Protection.* Remove temporary protection and facilities installed for protection of the work during construction.

D. *Compliance.* Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associated work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

CONTRACTOR'S FINAL AFFADAVIT AND WAIVER OF LIENS

PROJECT

OWNER

City of Calhoun

700 W. Line St.

Calhoun, GA

CONTRACTOR

ORIGINAL
CONTRACT
AMOUNT: _____

FINAL
CONTRACT
AMOUNT _____

STATE OF: _____ Georgia

COUNTY OF: _____ Gordon

FINAL PAY
REQUEST
DATE: _____

This is to certify that all claims for labor, material, services and any other just claims arising out of the performance of this Contract have been satisfied, and that no claims or liens exist against this Contractor in connection with this Contract; that to the best of our knowledge no claims or liens exist, and if any such claims or liens appear after the final payment due on the Contract, this Contractor shall save the Owner harmless on account thereof. After final payment due on this Contract, the undersigned does hereby waive, release, and relinquish any and all claims or rights of lein presently held or hereafter accruing upon the above project.

CONTRACTOR: _____

BY: _____
(Signature of Authorized Representative)

TITLE: _____

DATE: _____

Sworn to me and subscribed before me this

_____ Day of _____

(Notary Republic)

My commission expires: _____

GENERAL CONDITIONS

1. Definitions
2. Additional Instructional and Detail Drawings
3. Schedules, Reports and Records
4. Drawings and Specifications
5. Shop Drawings
6. Materials, Services and Facilities
7. Inspection and Testing
8. Substitutions
9. Patents
10. Surveys, Permits, Regulations
11. Protection of Work, Property and Persons
12. Supervision by Contractor
13. Changes in the Work
14. Changes in Contract Price
15. Time for Completion and Liquidated Damages
16. Correction of Work
17. Subsurface Conditions

DEFINITIONS

1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

1.2 ADDENDA -Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS, AND SPECIFICATIONS by additions, deletions, clarifications or corrections.

1.3 BID -The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the Work to be performed.

1.4 BIDDER -Any person, firm or corporation submitting a BID for the WORK.

1.5 BONDS -Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.

1.6 CHANGE ORDER -A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE OR CONTRACT TIME.

1.7 CONTRACT DOCUMENTS -The contract, including Advertisement For Bids, Information For Bidders, BID, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER,

18. Suspension of Work, Termination and Del.
19. Payments to Contractor
20. Acceptance of Final Payment as Release
21. Insurance
22. Contract Security
23. Assignments
24. Indemnifications
25. Separate Contracts
26. Subcontracting
27. City of Calhoun, Engineering Inspection Department's Authority
28. Land and Rights-of-Way
29. Guaranty
30. Arbitration
31. Taxes
32. Cost of Work
33. Contractor's Fee

DRAWINGS, SPECIFICATIONS, and ADDEND

1.8 CONTRACT PRICE -The total money payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

1.9 CONTRACT TIME- The number of calendar days stated in the CONTRACT DOCUMENTS the completion of the WORK.

1.10 CONTRACTOR -The person, firm, corporation with whom the OWNER has executed the Agreement.

1.11 DRAWINGS -The part of the CONTRACT DOCUMENTS which show the characteristics a scope of the WORK to be performed and which have been prepared or approved by 1 CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT.

1.12 CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT -The person, firm, corporation named as such in the CONTRACT DOCUMENTS.

1.13 FIELD ORDER -A written order effecting change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of t CONTRACTOR during construction.

1.14 NOTICE OF AWARD -The written notice the acceptance of the BID from the OWNER the successful BIDDER.

1.15 NOTICE TO PROCEED - Written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

1.16 OWNER -A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the WORK is to be performed.

1.17 PROJECT -The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

1.18 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.

1.19 SHOPDRAWINGS-All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by the CONTRACTOR, a SUB-CONTRACTOR, manufacturer, SUPPLIER, or distributor, which illustrates how specific portions of the WORK shall be fabricated or installed.

1.20 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards, and workmanship.

1.21 SUBCONTRACTOR -An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

1.22 SUBSTANTIAL COMPLETION -That date as certified by the CITY OF CALHOUN, ENGINEERING DEPARTMENT when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.

1.23 SUPPLEMENTAL GENERAL CONDITIONS - Modifications to General Conditions required by a Federal agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.

1.24 SUPPLIER -Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a specific design, but who does not perform labor at the site.

1.25 WORK -All labor necessary to produce the construction required by the CONTRACT

DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

1.26 WRITTEN NOTICE -Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed. When posted by certified or registered mail to the said party at his last given address or delivered in person to said party or his authorized representative on the WORK.

2 ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2 The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

3 SCHEDULES, REPORTS, AND RECORDS

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules showing the order in which he proposes to carry on the WORK, including dates at which he will start the various parts of the WORK, estimated date of completion of each part and as applicable:

3.2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress schedules showing the order in which he proposes to carry on the WORK, including dates at which he will start the various parts of the WORK, estimated date of completion of each part and, as applicable:

3.2.1 The date at which special detail drawings will be required; and

3.2.2 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

3.3 The CONTRACTOR shall also submit a schedule of payments that he anticipates he will earn during the course of the WORK.

4 DRAWINGS AND SPECIFICATIONS

4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

4.2 In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern.

Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

4.3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

5 SHOP DRAWINGS

5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT shall promptly review all SHOP DRAWINGS. The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT'S approval of any SHOP DRAWINGS shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.

5.2 When submitted for the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked, and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT.

6 MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

6.2 Materials and equipment shall be so stored as to insure the preservations of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the, WORK shall be located so as to facilitate prompt Inspection.

6.3 Manufactured supplies, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer.

6.4 Material, supplies, and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT.

6.5 Materials, supplies, or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

7 INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws ordinances, rules, regulations, or orders of any public authority having jurisdiction require any WORK TO specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT timely notice of readiness. The CONTRACTOR will then furnish the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT the required certificates of inspection, testing, or approval.

7.5 Inspections, tests, or approvals by the City of Calhoun, Engineering Inspection Department or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT and Their representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection or testing thereof.

7.7 If any WORK is covered contrary to the written instructions of the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT it must, if requested by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, be uncovered for his observations and replaced at the CONTRACTOR'S expense.

7.8 If the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT'S request will uncover, expose, or otherwise make available for observation, inspection or testing as the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT may require, that portion of the WORK, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection, and testing, and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction, and an appropriate CHANGE ORDER shall be issued.

8 SUBSTITUTIONS

8.1 Whenever a material, article, or piece of equipment is identified on the DRAWINGS OR SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that this is referenced for the performance or other products of equal capacities, quality, and function shall be considered. The CONTRACTOR may

recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if in the opinion of the OWNER and CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, such material, article, or piece of equipment is of equal substance and function to that specified, the OWNER and CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

9 PATENTS

9.1 The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the OWNER harmless from loss on account thereof. Except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified. However, if the CONTRACTOR has reason to believe that the design process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT.

10 SURVEYS, PERMITS, REGULATIONS

10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations, and cut sheets.

10.2 The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and in case of willful or careless destruction, he shall be charges with the resulting expense and shall be responsible for any mistakes that may be caused

by their unnecessary loss or disturbance.

10.3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses, and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance there-with, he shall promptly notify the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT in writing and any necessary changes shall be adjusted as provided in Section 13. CHANGES IN THE WORK.

11 PROTECTION OF WORK, PROPERTY AND PERSONS

11.1 The CONTRACTOR will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK. He will take all necessary precautions for the safety of and will provide the necessary protection to prevent damage, injury, or loss to all employees on the WORK and all materials or equipment to be incorporated therein whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction.

11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

11.3 In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT or OWNER, shall act to prevent threatened damage, injury, or loss. He will give the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall be issued covering the changes and deviations involved.

12 SUPERVISION BY CONTRACTOR

12.1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13 CHANGES IN THE WORK

13.1 The OWNER may at any time, as the need arises, order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

13.2 The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT also may at the time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME or both, in which event he shall give the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

14 CHANGES IN CONTRACT PRICE

14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

- (a) Unit prices previously approved.
- (b) An agreed lump sum.
- (c) If the Work involved is not covered by unit prices

contained in the Contract Documents and agreement to a lump sum is not reached, then the change in Contract Price shall be on the basis of the Cost of Work (determined as provided in Paragraph 32) plus a Contractor's fee overhead and profit (determined as provided in Paragraph 33).

15 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT.

15.4.1 To any preference, priority, or allocation order duly issued by the OWNER.

15.4.2 To unforeseeable causes beyond the

control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a CONTRACT with the OWNER, fires, floods, epidemics, quarantine, restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

16 CORRECTION OF WORK

16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17 SUBSURFACE CONDITIONS

17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:

17.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

17.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2 The OWNER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or

decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE: provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18 SUSPENSION OF WORK, TERMINATION, AND DELAY

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganized under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment or if he repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials, or equipment or if he disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction of the WORK or if he disregards the authority of the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT or if he otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment, and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT including compensation for additional professional services, such excess SHALL BE PAID TO THE

CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT and incorporated in a CHANGE ORDER.

18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, the OWNER may without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the Contract. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, terminate the CONTRACT and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition, and in lieu of terminating the CONTRACT, if the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT has failed to make any payment as aforesaid, the CONTRACTOR may upon then (10) days WRITTEN NOTICE to the OWNER and the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT stop the WORK until he has been paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a

reasonable time. An adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT.

19 PAYMENTS TO CONTRACTOR

19.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such, data as the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER'S title to the material and equipment and protect his Interest therein, including applicable insurance. The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT will, within ten (10) days after receipt of each partial payment estimate either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within thirty (30) days of presentation of him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The OWNER shall retain ten, (10) percent of the amount of each payment until final completion and acceptance of all work covered by the CONTRACT DOCUMENTS. The OWNER at any time, however, after fifty (50) percent of the WORK has been completed if he finds that satisfactory progress is being made shall reduce retainage to five (5%) percent on the current and remaining estimates. When the WORK is substantially complete (operational or beneficial occupancy), the retained amount may be further reduced below five (5) percent to only that amount necessary to assure completion. On completion and acceptance of a part of the WORK on which the price is stated separately in the CONTRACT. DOCUMENTS, payment may be made in full, Including retained percentages, less authorized deductions.

19.2 The request for payment may also include

an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.

19.3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

19.4 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

19.5 Upon completion and acceptance of the WORK, the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

19.6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of SUBCONTRACTORS, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged where upon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party,

In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.7 If the OWNER fails to make payment thirty (30) days after approval by the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

20 ACCEPTANCE OF FINAL PAYMENT AS RELEASE

20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the Performance BOND and Payment BONDS.

32. INSURANCE

32.1 The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- Claims under workmen's compensation, disability benefit, and other similar employee benefit acts:
- Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees:
- Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees:
- Claims for damages insured by usual

personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

- Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

32.2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These certificates shall contain a provision that coverage afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

32.3 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified:

- CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$500,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by anyone person in any one accident; and a limit of liability of not less than \$500,000 aggregate for any such damages sustained by two or more persons in anyone accident. Insurance shall be written with a limit of liability of not less than \$200,000 for all property damage sustained by anyone person in anyone accident; and a limit of liability of not less than \$200,000 aggregate for any such damage sustained by two or more persons in anyone accident.

- The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS

to fully complete the PROJECT.

32.4 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the work is performed. Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any work is sublet, the CONTRACTOR shall require such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

32.5 The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, and the OWNER.

22 CONTRACT SECURITY

22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance Bond and a Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by the CONTRACTOR of all undertakings, covenants, terms, conditions, and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a cooperate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its

right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies Acceptable on Federal BONDS. CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

23 ASSIGNMENTS

23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of his right, title, or interest therein, or his obligations thereunder, without written consent of the other party.

24 INDEMNIFICATION

24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT and their agents and employees from and against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom: and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2 In any and all claims against the OWNER or the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of

the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT, his agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs, or SPECIFICATIONS.

25 SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT any defects in such WORK that render it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT by himself, or he may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contractors (or the OWNER, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.

25.3 If the performance of additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves him in additional expense or entitles him to an extension of the CONTRACT TIME, he may make a claim therefor as provided in Sections 14 and 15.

26 SUBCONTRACTING

26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.

26.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(S), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.

26.3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

26.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS in so far as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

26.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

27. CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT

27.1 The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT shall act as the OWNER'S representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed. He shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship, and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply.

27.3 The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

27.4 The CITY OF CALHOUN, ENGINEERING INSPECTION DEPARTMENT shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. LAND AND RIGHTS-OF-WAY

28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

28.2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.

28.3 The CONTRACTOR shall provide at his own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29 GUARANTY

29.1 The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance BOND shall remain in full force and effect through the guarantee period.

30. VENUE

30.1 The laws of the State of Georgia shall govern the construction of this Contract. The courts of Gordon County, Georgia, shall have exclusive jurisdiction to try disputes arising under or by virtue of this Contract.

31 TAXES

31.1 The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the WORK is performed.

32. COST OF THE WORK

32.1 Costs Included: The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 32.2, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 32.2, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation,

superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 32.1.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a) The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b) Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c) Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d) Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e) Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f) Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or

otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g) The cost of utilities, fuel, and sanitary facilities at the Site.
- h) Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i) The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

32.2 Costs Excluded: The term Cost of the Work shall not include any of the following items:

Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 32.1.1 or specifically covered by Paragraph 32.1.4, all of which are to be considered administrative costs covered by the Contractor's fee.

Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 32.1.

Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 33.

Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 32.1 and 32.2, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

33. CONTRACTOR'S FEE

The Contractor's fee for overhead and profit shall be determined as follows:

- 1) a mutually acceptable fixed fee; or
- 2) if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
- 3) for costs incurred under Paragraphs 32.1.1 and 32.1.2, the Contractor's fee shall be 15 percent;
 - a) for costs incurred under Paragraph 32.1.3, the Contractor's fee shall be five percent;
 - b) where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 32 is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 32.1.1 and 32.1.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - c) no fee shall be payable on the basis of costs itemized under Paragraphs 32.1.4, 32.1.5, and 32.2;
 - d) the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - e) when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 33.3.a through 33.3.e, inclusive.

SECTION 04100 - SUPPLEMENTAL GENERAL CONDITIONS

1. DESCRIPTION OF THE WORK

The site of the proposed work is within Gordon County, along existing state and county roadways or along easements, with the location as shown on the Drawings.

The work consists of furnishing all labor, equipment, and services necessary for the construction of the project as shown on the Drawings.

2. DEFINITIONS

2.1. The following shall be added to the definitions listed in the General Conditions:

2.1.1. Contract Documents -The Contract Documents shall also include Certificate of Owner's Attorney, General Conditions, Supplemental General Conditions, Labor Standards, and all other certificates, regulations and documents herein bound.

2.1.2. Owner- City of Calhoun.

2.1.3. Supplemental General Conditions -Also such modifications to the General Conditions as the Owner or City of Calhoun, Engineering Inspection Department may deem necessary.

2.1.4. Approved -shall mean as approved, directed, required or permitted by the City of Calhoun, Engineering Inspection Department, unless specified otherwise.

2.1.5. Owner's Attorney will be William Bailey, or his lawfully designated successor or assistant.

2.1.6. City, County, or Authority: Calhoun, Georgia

3. SCHEDULES, REPORTS, AND RECORDS

3.1. Each such schedule is to be subject to change from time to time In accordance with the progress of the work.

3.2. The Contractor shall also furnish on forms to be supplied by the Owner and/or his City of Calhoun, Engineering Inspection Department:

- (a) a detailed estimate giving a complete breakdown of a lump sum contract price and
- (b) periodic itemized estimates of work done for the purpose of making partial payments thereon.

The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the Contract Price.

4. DRAWINGS AND SPECIFICATIONS

4.1 Work under this Contract shall comply with all applicable specification requirements set forth under "Specifications."

4.2 The Drawings, Specifications and Addenda shall form part of this Contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents, titles, headings, running headlines and marginal notes contained in the Contract Documents are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit, or cast light on the interpretation of the provisions to which they refer.

4.3 Upon award of the Contract, the Contractor upon request will be supplied free of charge up to six complete sets of the Drawings and Specifications. If the Contractor requests additional prints or specifications, they will be furnished to him at cost at the Contractor's expense.

4.4 The Contractor shall keep on the job a copy of the Drawings and Specifications and shall at all times give the Owner and City of Calhoun, Engineering Inspection Department access thereto. Anything mentioned in the Specifications and not shown on the Drawings or shown on the Drawings and not mentioned in the Specifications shall be of like effect as if shown or mentioned in both.

4.5 The Contractor shall not take advantage of any errors or omission which may exist in the Drawings and Specifications, but shall immediately call them to the attention of the City of Calhoun Engineering Inspection Department whose prompt interpretation or correction thereof shall be conclusive.

5. SHOP DRAWINGS

5.1 After checking and verifying all field measurements, the Contractor shall submit to the City of Calhoun Engineering Inspection Department for review seven copies of all Shop Drawings, which shall have been checked by and stamped with the approval of Contractor and identified as the City of Calhoun Engineering Inspection Department may require. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and the like to enable the City of Calhoun Engineering Inspection Department to review the information as required. The Owner may supply certain materials and shop drawings for the work.

5.2 The Contractor shall also submit for the City of Calhoun Engineering Inspection Department's review with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of the Contractor, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.

5.3 At the time of each submission, the Contractor shall in writing call the City of Calhoun Engineering Inspection Department's attention to any deviations that the Shop Drawing or sample may have from the requirements of the Contract Documents.

5.4 The City of Calhoun Engineering Inspection Department will review with reasonable promptness those Shop Drawings and samples submitted in accordance with the Contractor's approved Submittal Schedule, but his review shall be only for general conformance with the information given in the Contract Documents. The Contractor shall make any corrections required by the City of Calhoun Engineering Inspection Department and shall return the required number of corrected copies of Shop Drawings and resubmit new samples. The Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by the City of Calhoun Engineering Inspection Department on previous submissions. Contractor's stamp of approval on any Shop Drawing or sample shall constitute a representation to the Owner and the City of Calhoun Engineering Inspection Department that the Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawing or sample with the requirements of the work and the Contract Documents.

5.5 City of Calhoun Engineering Inspection Department's review of Shop Drawings or samples shall not relieve the Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless the Contractor has in writing called the City of Calhoun Engineering Inspection Department's attention to such deviation at the time of submission and the City of Calhoun Engineering Inspection Department has concurred in writing with the specific deviation, nor shall any review by the City of Calhoun Engineering Inspection Department relieve the Contractor from responsibility for errors or omissions in the Shop Drawings.

6. MATERIALS, SERVICES AND FACILITIES

6.1 Any work necessary to be performed after regular working hours, on Sundays or on legal holidays, shall be performed without additional expense to the Owner.

6.2 The Contractor warrants that he has good title to all materials, supplies, and equipment used by him in the work.

6.3 All materials required in the work may be stored on the site upon which the project is to be constructed, subject to approval by the City of Calhoun Engineering Inspection Department, but all such materials, tools, and machinery shall be neatly and compactly stored in such a manner as to not interfere with traffic and to cause the least inconvenience to the property owners. All fire hydrants, water and gas shut-off boxes must at all times be kept free and unobstructed.

underground power and telephone line manholes must not be covered by such materials.

- 6.4 Materials, tools, and machinery shall not be piled or placed against trees unless the trees shall be amply protected against injury there from. All materials, tools, machinery, etc., stored upon public thoroughfares must be provided with warning lights at night to warn the traffic of such obstruction.
- 6.5 The Contractor shall coordinate with the City of Calhoun in making arrangements for delivery and handling of equipment and materials as he may require for the prosecution of the work. The location of all temporary lines, roadways and similar facilities shall be subject to the approval of the City of Calhoun Engineering Inspection Department, and these shall be located and operated so as not to interfere with other work carried on by the Owner or by other contractors.
- 6.6 It is agreed that any temporary power lines, roadways or other facilities which the Contractor furnishes, installs, maintains, and removes at the completion of the work, may be used by the Owner or any of its contractors at such reasonable time or times as may be directed by the City of Calhoun Engineering Inspection Department. Likewise it is provided that similar facilities of other contracts n will become available to the Contractor under similar conditions.
- 6.7 Adequate sanitary facilities shall be provided by the Contractor. All such sanitary facilities shall conform to the requirements of the respective State and County Departments of Public Health.
- 6.8 Contractor shall furnish six hard hats which shall be made available to authorized Representatives and agents of the owner and any interested governmental agency while visiting the job site.

7. INSPECTION AND TESTING

- 7.1 All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be approved by the Owner. The cost of all inspection and testing of all materials and equipment for determination of source suitability, applicability, all certified mill tests, etc., shall be included in the contract price for supplying the

applicable materials and equipment, as no separate payment will be made for these services.

- 7.2 Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended. The Owner will pay for the inspection and testing directly and shall not be included in the Contract price.
- 7.3 Where mill tests of materials are found by the City of Calhoun Engineering Inspection Department to be acceptable, Contractor shall furnish certified copies of such mill tests. The cost of furnishing such certified copies shall be borne by the Contractor, with no separate payment allowed.
- 7.4 Where shop equipment performance tests are specified, the City of Calhoun Engineering Inspection Department shall be permitted to witness such tests. In the absence of a witnessed test, certified copies of shop tests shall be submitted at the discretion of the City of Calhoun Engineering Inspection Department. Cost of City of Calhoun Engineering Inspection Department's services in this test will be borne by the Owner.
- 7.5 No payment will be made to the Contractor for samples taken for tests such as concrete cylinders, etc.

8. PATENTS

- 8.1 License and/or royalty fees for the use of a process which is authorized by the Owner of the project must be reasonable and paid to the holder of the patent, or his authorized licensee, directly by the Owner and not by or through the Contractor .

9. SURVEYS, PERMITS, REGULATIONS

- 9.1 The Contractor shall procure all permits and licenses, pay all charges or fees, and give all notices necessary for the completion of the work.

10. PROTECTION OF WORK, PROPERTY AND PERSONS

- 10.1 In order to protect the lives and health of his employees under the Contract, the Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract.
- 10.2 The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation.

- 10.3 The Contractor shall, at his own expense, shore up and protect any buildings, bridges, or other public or private structures which may be encountered or endangered in the prosecution of the work, and that may not be otherwise provided for, and he shall repair and make good any damages to such property by reason of his operations. All existing fences which were removed by the Contractor due to prosecution of the work shall be replaced by the Contractor. No extra payment will be made for said work or materials, except where shown on the drawings or listed as a bid item.
- 10.4 Contractor shall repair or replace at his own expense any existing water pipes, power and communication lines, or other public utilities, roads, drain pipes, sewers, drainage ditches and all plantings (including grass) that are damaged during construction. The site shall be left in its present condition after all cleanup work has been done. Any damage to drainage or water pipes, local sewers, or plantings (including grass, utilities, roads, parking space, or other structures) shall be repaired and replaced immediately in the condition found. Such repairs and replacement shall be at the expense of the Contractor .
- 10.5 Contractor shall preserve all governmental markers (e.g. U.S.G.S., T.V.A., etc.), and none such will be removed or disturbed without prior approval of the City of Calhoun Engineering Inspection Department. Any removal and replacement of such markers shall be at the expense of the Contractor .
- 10.6 The Contractor shall employ watchmen on the work as necessary to protect the work from damage, vandalism, etc., and shall, when necessary, erect and maintain such strong and suitable barriers and such lights as will effectually prevent the happening of any accident to health, limb or property. Lights shall be maintained between the hours of one-half hour before sunset and one-half hour after sunrise.
- 10.7 Contractor will be required, at his own expense, to do every thing necessary to support, protect and sustain all sewer, water or gas pipe; service pipes; electric lights; power, telephone, or telegraph poles; conduits; and other fixtures laid across or along the site of the work. The City of Calhoun Engineering Inspection Department, as well as the company or the corporation owning said poles, pipes or conduits, must be notified by the Contractor before any such fixtures are removed or molested. In case any of the said sewer, gas, or water pipes; service pipes; electric lights; power, telephone or telegraph poles; conduits; or other fixtures are damaged, they shall be repaired by the authorities having control of the same, and the expense of said repairs shall be deducted from the monies due or to become due the Contractor under this Contract.
- 10.8 Should it become necessary to temporarily change the position or remove any poles, electric conduits, water pipes, gas pipes, or other pipes or wires, the Contractor shall notify the City of Calhoun Engineering Inspection Department and company or the corporation owning said poles, pipes or conduits of the location and circumstances, and shall cease work if necessary until satisfactory arrangements have been made by the owners of the said poles, pipes, conduits, or wires to properly care for the same. No claims for damages will be allowed on account of any delay occasioned thereby. The entire

cost of such temporary changes or removal must be included in the unit or lump sum prices bid for the various items of work under this Contract.

- 10.9 In the event of temporary suspension of work, or during inclement weather, or whenever the City of Calhoun Engineering Inspection Department shall direct, the Contractor will, and will cause his subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the City of Calhoun Engineering Inspection Department, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors to so protect the work, such materials shall be removed and replaced at the expense of the Contractor .
- 10.10 Before, during, and after installation, the Contractor shall furnish and maintain satisfactory protection to all equipment against injury by weather , flood or breakage, thereby permitting the work to be left in a perfect condition at the completion of the contract. No extra payment will be made for this work but the entire cost of the same shall be included in the price bid for the construction of the work done under this contract.
- 10.11 All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall strictly conform with the manufacturer's instructions.
- 10.12 Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

11 . SUPERVISION BY CONTRACTOR

- 11 .1 It is understood that the Contractor's representative shall be one who can be continued in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll.

12. SUBSTITUTIONS AND CHANGES IN THE WORK

- 12.1 All Change Orders, including a change in technical design or an increase in cost, must be approved by the Owner, the City of Calhoun Engineering Inspection Department and those governmental agencies whose approval is required.
- 12.2 Before executing any Change Order involving adjustment of the contract price, where necessary and desirable, the Contractor shall first obtain the consent of his surety.
- 12.3 No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the City of Calhoun Engineering Inspection Department approved by the Owner .

When the work is performed under the terms of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls, and vouchers covering all items of cost and when requested by the Owner, give the Owner access to accounts relating thereto.

12.4 The location of utility lines, pavements, and other appurtenant construction shown on the Drawings may be raised or lowered, may be moved from one location to another, or may be lengthened or shortened by the Owner because of clearances needed, easement changes, design changes, or any other reason. In such case, the Contractor shall be entitled to payment for the work based on the unit prices shown in the Bid Schedule. No additional payment will be allowed because of such changes unless the Contractor notifies the Owner in writing prior to commencing that portion of the work and an appropriate change order is prepared.

12.5 The Contract is based on the materials, equipment, and methods described in the Contract Documents.

12.6 The Owner, through the City of Calhoun Engineering Inspection Department, will consider proposals for substitution of materials, equipment, and methods only when such proposals are accompanied by full and complete technical data and all other information required to evaluate the proposed substitution.

12.7 The Contractor shall not substitute materials, equipment, or methods unless such substitution has been specifically approved for this project by the City of Calhoun Engineering Inspection Department.

13. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

13.1 The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain, and said amount shall be retained from time to time by the Owner from current periodic estimates.

13.2 The Owner will suffer financial loss if the project is not "substantially completed" on the date set forth in the Contract Documents. The Contractor and his Surety shall be liable for and shall pay to the Owner the sums stipulated in the Bid or Contract as fixed, agreed, and liquidated damages for each calendar day of delay until the project is "substantially completed. "

14. CORRECTION OF WORK

14.1 If, in the opinion of the City of Calhoun Engineering Inspection Department, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as, in the judgment of the City of Calhoun Engineering Inspection Department, shall be equitable.

15. SUBSURFACE CONDITIONS

- 15.1 Owner makes no representations about any subsurface conditions that may be encountered within the scope of the project. The Contractor should satisfy himself/herself by on-site inspections, core-drillings or other methods of the subsurface conditions that may be encountered. The risk of encountering and correcting such subsurface conditions shall be borne solely by the Contractor, and the Contract price shall include the cost of performing the work complete-in-place.
- 15.2 The City of Calhoun, Engineering Inspection Department may have made certain subsurface explorations in the vicinity of the work to be constructed under this Contract. These borings were made only for the City of Calhoun, Engineering Inspection Department's information in designing the project. Copies of these logs of borings and their locations may be purchased from the City of Calhoun, Engineering Inspection Department at the cost of one dollar (\$1.00) per sheet. These logs of borings are furnished only as information to Bidders for whatever interpretation and use they desire to make of conditions found when the borings were made. The Owner and City of Calhoun, Engineering Inspection Department do not warrant that the same conditions exist between borings and the Bidder shall satisfy himself as to the nature of the subsurface conditions throughout the project. If the Bidder wishes to make borings at any location, he shall be afforded the opportunity to do so. Cost of such borings shall be at the Bidder's expense.

16. PAYMENTS TO CONTRACTOR

- 16.1 No separate payment will be made for any items specified in the General Conditions or Supplemental General Conditions. Payments for such items shall be included in the unit price and lump sum prices bid by the Contractor for items listed in the Bid Schedule.
- 16.2 Prior to beginning construction, the Contractor shall submit for approval the proposed format for use in monthly pay requests along with an estimated schedule of progress payment amounts for the full construction period.
- 16.2 The payment request format shall be similar to AIA Document G702 and shall include a continuation sheet, similar to AIA Document G703, on which to enter the schedule of values, percentages of work completed, and the balance to finish. For unit price contracts, the schedule of values shall be identical to the bid item schedule included in the bid.

17. INSURANCE

- 17.1 Each insurance policy shall be renewed at least 15 days before the expiration date thereof.
- 17.2 Insurance must be carried by a recognized insurance company licensed to do business in the state in which the project is constructed and approved by the Owner's Attorney.
- 17.3 The Contractor's and his Subcontractor's Public Liability and Property Damage Insurance shall provide protection in the amounts specified in Paragraph 21.3.1 of the General Conditions and as further specified in the Special Conditions (if included) against the following special hazards:

Blasting Damage to existing structures, Damage to private driveways, walks, shrubbery, plantings, etc. Damage to public utilities, electric, water, telephone, gas, sewerage, etc. Damage markers.

The insurance certificates themselves must contain the naming of the aforesaid special hazards.

17.4 The Contractor shall not commence work under this Contract until he has obtained all the insurance required and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been so obtained and approved.

17.5 In the event any insurance coverage should be canceled or allowed to lapse, Contractor will not be permitted to work until adequate and satisfactory insurance is in effect. Failure to keep insurance policies in effect WILL NOT be cause for any claims for extension of time under this Contract.

17.6 Limits of liability for general public liability and property damage insurance shall not be less than:

Bodily Injury	\$ 500,000 each person 1,000,000 each occurrence	
Property Damage	\$ 250,000 500,000	each occurrence aggregate

17.7 Limits of liability for comprehensive motor vehicle liability and property damage insurance.

Bodily Injury	\$ 250,000 500,000	each person each occurrence
Property Damage	\$ 100,000	each occurrence

17.8 The Contractor shall provide builder's risk insurance to protect the Contractor and the Owner against risks of damage to buildings, structures, materials, and equipment not otherwise covered under installation floater insurance, from the perils of fire and lightning, the perils included in the standard extended coverage endorsement, and the perils of vandalism and malicious mischief. The amount of such insurance shall be not less than the insurable value of the work at completion less the value of the materials and equipment insured under installation floater insurance. If the work does not include the construction of building structures, builder's risk insurance may be omitted providing the installation floater insurance fully covers the work.

17.9 The Contractor shall provide installation floater insurance to protect the Contractor and the Owner from all insurable risks of physical loss or damage to materials, products and equipment not otherwise covered under builder's risk insurance while in warehouses or storage areas, during installation, during testing, and after the work is completed. Equipment such as pumps, motors, engine-generators, compressors, process equipment, switch gear , transformers, panel boards, control equipment, and other similar equipment shall be insured under installation floater insurance when the aggregate value of the equipment exceeds \$10,000.

18. CONTRACT SECURITY

- 18.1 A Payment Bond in the amount of 100 percent of the contract price and a Performance Bond in the amount of 100 percent of the contract price shall be required in the form set forth in the Contract Documents.
- 18.2 Whenever a Construction and Maintenance or Maintenance Bond may be required in these Contract Documents, the same shall be the Performance Bond included herein.

19. ASSIGNMENTS

- 19.1 In case the Contractor assigns all or any part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the work called for in this contract.

20. SUBCONTRACTING

- 20.1 The Contractor shall not award any work to any Subcontractor without prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the Subcontractor, which statement shall contain such information as the Owner may require.

21. CITY OF CALHOUN ENGINEERING INSPECTION DEPARTMENT

- 21 .1 The Owner may appoint such resident project representatives as he may desire. Scope of the resident project representative's authority will extend to all parts of the work and to the preparation and manufacture of the materials to be used. A resident project representative is placed on the work to keep the City of Calhoun Engineering Inspection Department and Owner informed as to the progress of construction and the manner in which it is being done and also to call to the attention of the Contractor any deviation from the Drawings and Specifications.
- 21 .2 The resident project representatives have the authority to reject defective material or work that is being improperly done subject to the final decision of the Owner and City of Calhoun Engineering Inspection Department The resident project representatives are not authorized to revoke, alter, enlarge, or relax the provisions of these conditions, nor are they authorized to approve or accept any portion of the completed work, or to issue instructions contrary to the Drawings and Specifications.

21 .3 The Contractor may request written instructions from the Owner and City of Calhoun Engineering Inspection Department upon any important items which lie within the resident project representative's jurisdiction.

22. LAND AND RIGHTS-OF-WAY

22.1 In the event all land and rights-of-way have not been obtained as herein contemplated before construction begins, the Contractor shall begin the work upon such land and rights-of-way as the Owner may have previously acquired, and no claim for damages whatsoever will be allowed by reason of the delay in obtaining the remaining land and rights-of-way. Should the Owner be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement, by reason of any litigation, or by reason of its inability to procure any lands or rights-of-way for the work, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay, or to withdraw from the Contract except by consent of the Owner; but time for completion of the work will be extended to such time as the Owner determines will compensate for the time lost by such delay such determination to be set forth in writing.

23. CONFLICTING CONDITIONS

23.1 Any provision in any of the Contract Documents which may be in conflict or inconsistent with any of the paragraphs in the General Conditions or the Federal Regulations shall be void to the extent of such conflict or inconsistency except if when and as clarified by the Supplemental General Conditions. Interpretations of any conflicts not clarified may be requested by the Contractor in writing to the City of Calhoun Engineering Inspection Department. In the event of conflicts between funding agency documents, the more restrictive will apply.

23.2 In case of unresolved conflict between items of the Contract Documents, the following order of precedence shall govern, with the higher item taking precedence over a lower item:

- Contract (including Supplemental Agreements and Change Orders thereto)
- Addenda
- Bid Proposal
- Supplemental General Conditions
- General Conditions
- Specifications
- Governing Standard Specifications
- Schedules on Drawings
- Notes on Drawings
- Details on Drawings
- Large Scale Drawings
- Small Scale Drawings
- Dimensions Given in Figures
- Scaled Dimensions

23.3 In the event of any discrepancy between any drawing and the figure written thereon, the figures, unless obviously incorrect, shall be taken as correct.

24. REQUIRED PROVISIONS DEEMED INSERTED

24.1 Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the Contract shall forthwith be physically amended to make such insertion or correction.

25. PROHIBITED INTEREST

25.1 No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this Contract or to any benefit that may arise there from, but this provision shall not be construed to extend to this Contract if made with a corporation for its general benefit.

25.2 No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving any architectural, City of Calhoun Engineering Inspection Department, inspection, construction or material supply contract or any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part hereof. No officer, employee, architect, attorney, City of Calhoun Engineering Inspection Department or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the Project, shall become directly or indirectly interested personally in this contract or in any part thereof, any material, supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.

26. USE OF PREMISES AND REMOVAL OF DEBRIS

26.1 The Contractor expressly undertakes at his own expense:

- (a) To take every precaution against injuries to persons or damage to property;
- (b) To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other contractors;
- (c) To place upon the Work or any part thereof only such loads as are consistent with the safety of that portion of the Work;

- (d) To clean up frequently all refuse, rubbish, scrap materials and debris caused by these operations, to the end that at all times the site of the Work shall present a neat, orderly and workmanlike appearance;
- (e) Before final payment to remove all surplus material, false work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition;
- (f) To effect all cutting, fitting or patching of his work required to make the same to conform to the Drawings and Specifications and, except with the consent of the City of Calhoun Engineering Inspection Department, not to cut or otherwise alter the work of any other contractor .

27. ESTIMATE OF QUANTITIES

- 27.1 Wherever the estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of the Contract Documents including the proposal, they are given for use in comparing Bids, and the right is especially reserved except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by the Owner to complete the Work contemplated by this Contract, and such increase or decrease shall in no way nullify this Contract, nor shall any such increase or decrease give cause for claims or liability for damages.

28. CONTRACTOR'S OBLIGATIONS

- 28.1 The Contractor shall in good workmanlike manner perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete the Work required by this Contract, within the time herein specified, in accordance with the provisions of this Contract and said Specifications and in accordance with the Drawings covered by this Contract and all supplemental drawings, and in accordance with the directions of the City of Calhoun Engineering Inspection Department as given from time to time during the progress of the Work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required. The Contractor shall observe, comply with and be subject to all terms, conditions, requirements, and limitations of the Contract and Specifications and shall do, carry on, and complete the entire work to the satisfaction of the City of Calhoun Engineering Inspection Department and the Owner .
- 28.2 The Contractor shall restore disturbed areas to original or better condition.
- 28.3 When work performed under this Contract is in areas where easements and working agreements have been obtained by the Owner on private properties, it shall be the responsibility of the Contractor to protect trees, shrubs, gardens, etc., insomuch as is possible and to restore said properties to the satisfaction of the property owners, said protection and restoration

shall include but not be limited to the fencing off of trees and shrubs, transplanting of trees and shrubs, etc., replacing topsoil removed with topsoil of equal or better quality, regrassing, and replacing fences. All expenses for said protection and restoration shall be borne by the Contractor, and no separate payment shall be made for this work.

When work is done on private property in easements and working agreements obtained by the Owner, the Contractor shall furnish affidavits from the property owners attesting to the fact that their property has been satisfactorily restored before that portion of the work will be considered for final payment.

29. PAYMENTS BY CONTRACTOR

29.1 The Contractor shall pay (a) for all transportation and utility services not later than the 20th day of the calendar month following that in which services are rendered, (b) for all materials, tools, and other expendable equipment to the extent of 90 percent of the cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at the site of the Project, and the balance of the cost thereof not later than the 30th day following the completion of that part of the Work in or on which such materials, tools, and equipment are incorporated or used, and (c) to each of his subcontractors, not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his subcontractors to the extent of each subcontractor's interest therein.

30. INFORMATION TO BE FURNISHED

30.1 Contractor shall fill out all questionnaire forms completely in preparing his Bid and after award shall supply to the City of Calhoun Engineering Inspection Department all pertinent information required .

31. WAIVER

31 .1 It is expressly understood and agreed that any waiver granted by the City of Calhoun Engineering Inspection Department or the Owner of any term, provision or covenant of this Contract shall not constitute a precedent nor breach of the same or any other terms, provisions or covenants of this Contract.

31 .2 Neither the acceptance of the Work by the Owner nor the payment of all or any part of the sum due the Contractor hereunder shall constitute a waiver by the Owner of any claim which the Owner may have against the Contractor or surety under this Contract or otherwise.

32. CONNECTING OF EXISTING WORK

32.1 Contractor shall remove such existing masonry and piping as is necessary in order to make the proper connections to these structures at the locations shown. Also, he shall make the necessary pipeline, roadway, and other connections at the several points in order that on completion of the Contract, all required flows may flow through the several pipelines and structures. No extra payment shall be made for this work, but the entire cost of the same shall be included in the price bid for the various items of the Work to be done under this Contract.

33. PROGRAM AND METHOD OF CONSTRUCTION

33.1 The order or sequence of execution of the Work and the general arrangements of the construction plant to be installed shall at all times be subject to the approval of the City of Calhoun Engineering Inspection Department. If at any time before the commencement or during the progress of the Work, or any part of it, such features, and appliances used or to be used appear to the City of Calhoun Engineering Inspection Department as insufficient, or improper, he may order the Contractor to improve their character, and the Contractor shall conform to such orders, but the failure of the City of Calhoun Engineering Inspection Department to demand any increase of safety, efficiency, adequacy, or any improvement shall not release the Contractor from his obligation to secure the safe conduct and quality of the Work specified.

34. BUILDINGS AND SHANTIES

34.1 No shanties, camps, or buildings for the housing of men employed on the Work shall be erected on land owned or leased by the Owner unless a permit, in writing, is secured from the Owner allowing their construction. Should permission be asked and granted, the Contractor must comply with all regulations regarding the construction and maintenance of such buildings.

35. "OR EQUAL" CLAUSE

35.1 Any reference to an item of equipment or material by a specific manufacturer's brand or trade name in these Contract Documents is intended merely as a standard. Products or materials of other manufacturers which, in the opinion of the City of Calhoun Engineering Inspection Department, are the equal of that specified considering quality, workmanship, and economy of operation and are suitable for the purpose intended, will be accepted.

35.2 Where the phrase "or equal" occurs in the Contract Documents, the Contractor shall not assume that materials, equipment, or methods will be approved by the City of Calhoun Engineering Inspection Department unless the item has been specifically approved for this project by the City of Calhoun Engineering Inspection Department .

35.3 The decision of the City of Calhoun Engineering Inspection Department shall be final.

- 35.4 The Contractor shall provide all data required by the City of Calhoun Engineering Inspection Department to verify the equality of items which the Contractor may wish to substitute for the specified items.
- 35.5 The Contractor shall verify prior to bidding that all specified items will be available in time for installation during orderly and timely progress of the project.
- 35.6 In the event specified items will not be so available, the Contractor shall notify the City of Calhoun Engineering Inspection Department prior to receipt of bids.
- 35.7 Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Contractor, will be back charged as necessary and shall not be borne by the Owner .
- 35.8 In cases where experience clauses are used, an alternate bond or cash deposit may be accepted from manufacturers which do not meet the specified experience period. The bond or cash deposit provided by the manufacturer or supplier will guarantee replacement of the equipment or process in the event of failure or unsatisfactory service. The period of time for which the bond or cash deposit is required shall be the same as the experience period of the time specified.

36. CONSTRUCTION METHODS AND PROTECTION OF PROPERTIES

- 36.1 Cooperation with Utilities -The Contractor shall be cooperative at all times with all utilities, or their duly authorized agent or contractor, installing or connecting new services and shall coordinate all phases of the work with said utilities to avoid unnecessary delays or complications.
- 36.2 Damage to Property
- (a) The Contractor is warned to prevent excessive dust or air pollution that may disfigure or soil any public or private facilities. The use of water sprinklers or other approved devices to reduce dust will be necessary if such is the case. Additionally, in cases of heavy rains or storms, every effort shall be made to prevent mud or water which may result due to the construction from accumulating on or damaging any property or any private owner.
- (b) Contractor shall use special care in working in areas where the right-of-way crosses private property. Contractor shall also replace, at his/her own expense, any existing water pipes, power lines, communication lines, or other public utilities, roads, drain pipes, sewers, drainage ditches, and all plantings including grass and/or sod on private property. The site shall be left in its present condition after all cleanup work has been done. Any damage to drainage pipes, water pipes, local sewers, plantings (including grass and/or sod), utilities, roads, parking space, or other structures shall be repaired and replaced immediately in the condition found. Such repairs and replacement shall be at the expense of the Contractor.

36.3 Existing Sanitary, Combined and/or Storm Sewers

- (a) Whenever existing sewers are broken or damaged as a result of traffic or excavation by the Contractor, the maintenance, replacement, and/or repairs to the damaged existing sanitary, combined, and/or storm sewer shall be the Contractor's responsibility, except as otherwise provided for on the Drawings and in the Contract Documents, or as authorized by the City of Calhoun Engineering Inspection Department, and the expense of maintaining, repairing, replacing, or connecting to existing sewers shall be borne by the Contractor.
- (b) No separate payment will be made for handling sewage from existing sewers or interrupted connections, since it shall be the responsibility of the Contractor to maintain services until such time as the proposed or relocated sewers can be constructed. If the Contractor should damage any existing sewer, such that it affects the public interest, health, or general welfare, the Contractor shall replace or repair that sewer at his/her own expense as directed by the City of Calhoun Engineering Inspection Department .
- (c) Contractor shall make all connections to existing sewerage facilities as shown on the Drawings.

37. SEWAGE, SURFACE, AND FLOOD FLOWS

- 37.1 The Contractor shall furnish all the necessary equipment, shall take all necessary precautions and shall assume the entire cost of handling any sewage, seepage, storm, surface, and flood flows which may be encountered at any time during the construction of the Work. The manner of providing for these flows shall meet the approval of the City of Calhoun Engineering Inspection Department, and the entire cost of said work shall be included in prices bid for the various items of the Work to be done under this Contract.
- 37.2 The Contractor will minimize siltation and bank erosion during construction.
- 37.3 During the period of construction the Contractor shall cooperate with the Owner's employees in maintaining all existing collection, pumping, and treatment facilities in operation. The cost of any temporary conveyances or bypass pumping shall be included in the price bid for other items as for lump sum of work under this Contract, as no separate payment will be made.
- 37.4 The Contractor shall not discharge or allow discharge of pollutants, as defined in the Clean Water Act, including fill and sediment, into waters of the State or United States, including wetlands, unless authorized by an appropriate State or Federal permit. This prohibition specifically applies to silt and sediment in storm water runoff and in water pumped from trenches and excavations.
- 37.5 In the event that pollutants are discharged or otherwise released to the environment as the result of the Contractor's negligence or unlawful conduct, it is understood and agreed that the Contractor shall bear all risks associated with such release(s), shall indemnify the Owner and the City of Calhoun, Engineering Inspection Department

from any liabilities resulting from the release(s), and shall not make any claim for additional compensation for delays or damage resulting from such release(s).

38. OBSTRUCTIONS ENCOUNTERED

- 38.1 Giving of this information upon the Drawings will not relieve the Contractor of his obligations to support and protect all pipelines and other structures which may be encountered during the construction of the work and to make good all damages done to such pipelines. In addition to showing the structures to be built under this Contract, the Drawings show certain information obtained by the Owner regarding the pipelines and other structures which exist along the site of the Work, both at and below the surface of the ground. The Owner expressly disclaims any responsibility for the accuracy or completeness of the information given on the Drawings with regard to existing structures and pipelines, and the Contractor will not be entitled to any extra compensation on account of inaccuracy or incompleteness of such information, said structures and pipelines being shown only for the convenience of the Contractor who must verify the information to his own satisfaction.

39. USE OF STREETS AND TRAFFIC CONTROL

- 39.1 During the progress of the Work, the Contractor shall make ample provision for both vehicular and foot traffic on any public road, and shall indemnify and save harmless the Owner from any expense whatsoever due to his operations over said roadways. The Contractor shall also provide free access to all fire hydrants, water and gas valves located along the line of his work. Gutters and waterways must be kept open or other provisions made for the removal of storm water. Street intersections may be blocked only one-half at a time, and the Contractor shall lay and maintain temporary driveways, bridges and crossings such as in the opinion of the City of Calhoun Engineering Inspection Department are necessary to reasonably accommodate the public and to provide access to needed private driveways. In the event of the Contractor's failure to comply with these provisions, the Owner may cause the same to be done and will deduct the cost of such work from any monies due or to become due the Contractor under this Contract, but the performance of such work by the Owner or at its insistence shall serve in no wise to release the Contractor from his general or particular liability for the safety of the public or the Work.

The contractor will be responsible for preparing a traffic control plan showing the proposed measures to manage traffic during construction activities. The plan shall be implemented anytime traffic is impacted and shall conform to the 2003 Manual of Uniform Traffic Control Devices and to Georgia DOT Specification 150. Lane closures will require proper lane tapers and advance warnings per Georgia DOT standards. Any lane closures of state roads must be approved by and coordinated with the Georgia DOT Area Engineer.

- 39.2 Required line crossings of all streets and roads shall be done in accordance with the applicable state Department of Transportation procedures.
- 39.3 Contractor may be permitted to close a street or road when necessary for the proper prosecution of the work. The Contractor must coordinate with the City of Calhoun Engineering Inspection Department for advertising and notification of emergency personnel, school systems and residents.

- 39.4 The Contractor shall maintain property barricades and flagmen to detour traffic.
- 39.5 At all times the Contractor is responsible for damage to city and county streets as a result of their use in this project. The streets must be kept clear of all dirt, stone, or other debris. All debris, dirt, etc., whether caused by rains, storms, spillage from trucks or otherwise, shall be kept out of sewers. The Contractor is responsible for and may not plead ignorance of city and county ordinances and amendments thereto that may affect this use of streets or sewers.

40. CONSULTING AND RESIDENT OBSERVATION SERVICES DURING CONSTRUCTION

- 40.1 In providing the Project with consulting services and resident project representation during construction, the Owner, the City of Calhoun Engineering Inspection Department, and their employees do not assume any duty to supervise construction means or methods and safety procedures followed by any contractor, subcontractor and/or their respective employees or to any other person; nor for any public liability or for property damage caused through acts of the Contractor , subcontractor and/or their respective employees or any other person.

41. SAFETY AND HEALTH REGULATIONS

- 41.1 The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54).
- 41 .2 Contractor shall allow free access to any Department of Labor Representative for inspection purposes.

42. ACCESS BY REPRESENTATIVES OF GOVERNMENTAL AGENCIES

- 42.1 The authorized representatives and agents of all governmental agencies involved in this project shall have access to the work at all times and shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. Contractor shall provide proper facilities for the access and inspection of the work by such persons.

43. LOCAL AND STATE LAWS

- 43.1 The Contractor shall abide by all local and State laws or ordinances to the extent that such requirements do not conflict with Federal laws or regulations.

44. NEW JOB OPPORTUNITIES

44.1 The Contractor shall:

- (a) To the maximum extent practicable, follow hiring and employment practices which will assure that performance of the Work results in new job opportunities for the unemployed and the underemployed; and
- (b) Insert or cause to be inserted the same or similar provisions in each construction subcontract.

45. CONSTRUCTION RESTRICTIONS

- 45.1 Heavy construction machinery shall not be used within 500 feet of residential areas between the hours of 10:00 p.m. and 7:30 a.m.
- 45.2 No blasting or drilling shall be performed within 500 feet of residential areas between the hours of 10:00 p.m. and 7:30 a.m.

46. LEAD BASE PAINT AND JOINT SEALERS

- 46.1 No lead-based paints, protective coatings or joint sealers may be used on this project.

47. SUSPENSION AND RESUMPTION OF CONTRACT

- 47.1 Pursuant to the conditions as set out in the Specifications for hot asphaltic concrete binder and surface courses with particular reference to the limitations or temperature and weather conditions, the Owner may at its option and upon written notice, suspend the Contract over the winter and bad weather months. The Contract may then be resumed when weather conditions will permit the application of the above pavement, at the discretion of the City of Calhoun, Engineering Inspection Department. The notice to resume said contract shall be in writing. The suspended period will in no way be counted against the Contractor's allotted time to do the entire work.
- 47.2 This provision does not relieve the Contractor of the responsibility to maintain existing work already completed or any other responsibilities of the Contract; nor shall the Contractor, upon the basis of this fair notice herein; be eligible to make claim for or receive any damages for loss of overhead, plant expense, or anticipated profits, nor any other expenses incurred due to delay.

48. ABANDONMENT OR TERMINATION OF CONTRACT

- 48.1 For contracts over \$10,000, the Owner reserves the right to abandon the Contract if it will be in the Owner's best interest. The Contractor will be

paid a fair payment, as negotiated with the Owner, for the work completed to date.

9. EVIDENCE OF PAYMENT

- 9.1 Contractor may be asked to present acceptable evidence from time to time that all bills have been paid for labor, materials, and equipment for which payment on account has been made in monthly estimates. Before final payment is made, Contractor shall, if required by the Owner, present sworn affidavit that all labor, materials, equipment, and service engaged for the work have been paid in full and that there are no outstanding debts or liens on any portions of the work.

50. ACCESSIBILITY OF RECORDS

- 50.1 The Owner, representatives of applicable federal agencies, the Comptroller General of the United States, or any of their duly authorized representatives, for a period of 3 years beyond completion of the Contract, shall have access to any books, documents, papers, and records of the Contractor which are directly pertinent to this Project for the purpose of making audit, examination, excerpts, and transcriptions of contracts in excess of \$10,000.

51. WORK WEEK, OVERTIME PAY, SHOW-UP PAY, AND ON-CALL PAY

- 51.1 All work performed under this Contract shall be performed on a 40-hour work- week basis and shall include not only the prime Contractor but any and all subcontractors. The 40-hour work week shall be established by the Contractor at the Preconstruction Conference. Any deviation from the established work week will be approved in advance in writing by the Owner . Any additional cost incurred by the Owner due to deviations from the established work week will be borne by the Contractor. The Contractor shall provide written acknowledgment that he will pay any overtime cost incurred by the Owner at the time of requesting an increase in the 40-hour work week.
- 51.2 The Contractor will be assessed for each hour of overtime incurred by the City of Calhoun Engineering Inspection Department's field representative(s) as a result of extended work hours (i.e., a total of more than 40 hours per calendar week) by the Contractor or his subcontractors.
- 51.3 If the Contractor advises the Owner and the City of Calhoun Engineering Inspection Department's field representative(s) that he will work on a particular day and subsequently decides not to work and does not so advise the representative(s) before he departs for the job site, the Contractor will be assessed an amount equal to 2 hours of the representative's time for "show-up" pay plus round-trip travel time and mileage. Show-up pay will not be assessed in the event of inability to work due to unanticipated inclement weather.

- 51.4 If the Contractor requests that the Owner and the City of Calhoun Engineering Inspection Department's field representative(s) be available to work on a weekend or a holiday but does not actually commit to work, the Contractor will be assessed an amount equal to 2 hours of the representative's time for "on-call" pay for each day that the Contractor so requests.
- 51.5 The above assessments for field representative's overtime pay, show-up pay, and on-call pay will be deducted as a separate line item on the Contractor's next progress payment request. Unless otherwise stated, the field representative's time will be assessed at \$30.00 per hour for regular time and \$45.00 per hour for overtime.

END OF SECTION

04100

23 of 23

SECTION 04300 – TRAFFIC REGULATION

1. General

- 1.1. Work Included: Provide, operate and maintain equipment, services and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow and provide for the safety of personnel and the public.
- 1.2. Related Requirements: Comply with traffic control and safety requirements of any Georgia DOT permits applicable to the work. Any lane closures must be approved by and coordinated with the Georgia DOT Area Engineer. Lane closures will require proper lane tapers and advance warnings per Georgia DOT standards.

2. Products

- 2.1. Traffic Signals and Signs: Provide and operate traffic control and directional signals required to direct and maintain an orderly safe flow of traffic in all areas under Contractor's control or affected by Contractor's operations. All signing, marking, and traffic control shall conform to the Manual on Uniform Traffic Control Devices, Current Edition.
- 2.2. Barricades and Lights:
 - 2.2.1. Where the roadway or shoulder must be left in a disturbed condition overnight, provide barricades with flashers at intervals so that they are continuously visible from either direction.
 - 2.2.2. Provide flares and/or lights during periods of low visibility.
 - 2.2.3. Provide illumination of critical traffic and parking areas.

3. Execution

- 3.1. Traffic Control Plan: The contractor will be responsible for preparing a traffic control plan showing the proposed measures to manage traffic during construction activities. The plan shall conform to the Manual of Uniform Traffic Control Devices and Georgia DOT Specification 150.
- 3.2. Flagmen: Provide qualified and suitably equipped flagmen when construction operations encroach on traffic lanes.
- 3.3. Parking: Arrange for temporary parking areas to accommodate construction personnel.
- 3.4. Access to Property:
 - 3.4.1. Maintain traffic access to all driveways and parking areas at all times except when temporary (up to 6 hours) blockage is necessary for construction.
 - 3.4.2. Notify residential and business property owners at least 24 hours in advance of any proposed blockage of access, giving notice of approximate time and duration of such blockage of access.

END OF SECTION

SECTION 04600 - SUBMITTALS

1 Description:

This Section which covers additional requirements for submittals is supplementary to the General Conditions and forms a part of all other Sections in which submittals are specified or required. If the City of Calhoun supplies certain materials for the work, the Contractor shall not be responsible for submittals on materials supplied by the Owner.

2 Submittal Procedures:

Unless otherwise specified, submit at least 5 copies {includes only 1 for return to Contractor) of initial submittals within 30 days after issuance of the Notice to Proceed. If re-submittals are required, the Contractor will be notified in writing of required corrections or of rejected submittals and shall submit new or corrected submittals within 15 days after such notification.

3 Contractor's Responsibility:

A. Each submittal must include the Contractor's statement that the submission has been reviewed and approved by the Contractor. This statement shall warrant that the submittal conforms to the requirements of the Contract Documents except for any deviations, which shall be clearly noted.

B. Contractor's review and approval stamp must be on each sheet of each submittal. Provide a title block identifying the Project; the Contractor; The Subcontractor, Manufacturer, or Supplier; the date; scale of drawings; and a drawing or sheet identification number.

C. On each submittal provide a 3-1/2" x 2" clear space for the City of Calhoun Engineering Inspection Department's approval or correction stamp.

4 Samples:

If samples are required, submit at least 60 days prior to start of operations involving material sampled. Label or tag each sample or set of samples identifying the manufacturer's name and address, brand name, catalog number, project title, and intended use.

5 Limitations of City of Calhoun Engineering Inspection Department's Responsibility:

City of Calhoun Engineering Inspection Department's review of Contractor's submittals will be only for conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. The Contractor is fully responsible for confirming and correlating all quantities and dimensions; for selecting fabrication processes and techniques of construction; and for coordinating work with that of all trades.

END OF SECTION

MEASUREMENT AND PAYMENT

Section 04700

1.1 Scope:

- A. This Section describes the procedures for preparing and processing Applications for Payment. The provisions apply to all Work unless specific instructions are provided within individual Sections of the Specifications.
- B. The basis of payment will be the unit prices and / or lump sum amounts included in the Bid Form. Nothing in this Section shall be construed as providing for additional payment beyond the contractual bid items. All incidental work necessary for a complete and operable project is included in the bid prices. Full payment will be made for completed bid items only.
- C. Applications for Payment will be accepted on a monthly cycle, or less frequently.

1.2 Measurement of Work:

- A. Measure all Work, in the presence of the City of Calhoun Engineering Inspection Department's Representative, prior to each submittal of an application for Payment. Provide City of Calhoun Engineering Inspection Department a minimum of two (2) working days notice for making required measurements.
- B. Specific bid items shall be measured as follows:
 - (1) Lump sum items: will be measured for completion against the Schedule of Values provided by the Contractor. Everything necessary for complete and operable Work shall be included in the lump sum per-each item.
 - (2) Unit Price Items: Will be measured and paid on a unit price basis for actual installed items. All related work shall be included.
 - (3) D.I. fittings will be counted and paid at the minimum specification weights published in AWWA C110 or C153 (based on the type fitting installed) for ductile iron, mechanical joint fittings, pressure rating 350 psi, weight of body casting only. AWWA standard weights will be paid regardless of actual weights of fittings installed. Reaction blocking shall be included in the unit prices bid for the fittings.
 - (4) Pavement Replacement for asphalt and concrete roadways, driveways and parking lots will be measured and paid in linear feet, measured along the center line of the route. **No additional payment shall be made for damaged pavement outside of area as described herein.** No additional payment will be made for replacing or maintaining gravel or stone surfaces.
 - (5) Erosion Control will be paid as per items included on the Bid Form. Erosion Control includes temporary construction exit(s), check dams, sediment traps and other structures required by the Erosion and Sedimentation Control Plan and Details. Erosion Control includes temporary vegetative cover and maintenance of erosion control measures until completion and acceptance of the work.
 - (6) Final Clean-up and Permanent Grassing will be measured and paid only if it is a separate linear foot bid item. If so, measurement will be along the centerline of the installed pipe. Width of grassed area will not be a factor in payment. All disturbed areas must be cleaned-up and a full stand of permanent grass must be established before payment. Spoil material shall be disposed of by the contractor at no additional expense to the

owner unless specifically approved by the City of Calhoun Engineering Inspection Department.

- (7) Crushed stone for special bedding or backfill: will be paid only if its use was directed by the City of Calhoun Engineering Inspection Department. If so, its payment will be by the ton (or on a cubic yard basis using a conversion factor of 1.66 tons per cubic yard, **measured in place**). No payment will be made unless quantities were verified by the City of Calhoun Engineering Inspection Department. No payment will be paid for crushed stone used to cushion pipe in rock excavation; for roadway or driveway maintenance; for gravel driveway replacement; for satisfying special D.O.T. requirements; for bedding pipe when class C or B bedding is specified. The unit price shall include all manpower and equipment necessary for the hauling and installation of crushed stone for backfill as directed.
- (8) Rock excavation will be measured for payment only if it is a separate bid item. Rock will be measured as the actual dimensions of rock excavated, except that no payment will be made for a depth greater than 6 inches below the invert of the pipe, or for a trench width greater than O.D. of bell or coupling plus 15 inches. Rock will be measured for payment only when specifically approved by the City of Calhoun Engineering Inspection Department prior to excavation. The cost of rock disposal and extra granular material to cushion pipe in areas of rock excavation shall be included in the unit price bid.
- (9) PVC and Ductile Iron Water Mains: will be measured for each diameter, depth of cut, type of pipe and installation method shown on the bid form. The depth of cut will be measured as the vertical distance between the top of the pipe and ground profile existing at the time of excavation, unless otherwise noted. Depths of cut up to and including 3 feet will be paid at the 0-3' price; depths of cut above 3 feet to and including 6 feet will be paid at the 3'-6' cut price, and so on. The length of water mains will be measured as the required horizontal length which is actually installed. No extra payment will be made for water mains laid deeper than called for by the Drawings, unless the change has been approved City of Calhoun Engineering Inspection Department prior to installation of the pipe. Testing shall be included in the unit price bid.
- (10) Gravity Sewer Pipe (DIP and PVC): will be measured for each diameter, type of pipe, and installation method shown on the bid form. The lengths of pipes will be measured as the required horizontal length which is actually installed. The unit price shall include the crushed stone used for pipe bedding.
- (11) Transport and dispose of excess material or unsuitable material: will be measured in place as taken from the trench excavation. Measurement and payment will only be made when specifically approved by the City of Calhoun Engineering Inspection Department. The unit price shall include all manpower and equipment necessary for loading, hauling and disposal of excess material or unsuitable material.
- (12) Clearing and Grubbing: will be measured and paid for by the linear foot. Minimum width of clearing shall be 20 feet (10 feet on each side of the proposed pipe centerline) and the maximum width shall be fifty feet (50'). Clearing shall be defined as underbrush or trees which prohibit the installation of the pipe line or appurtenances. The cost of hauling and disposing shall be included in the unit price bid.
- (13) Compacted Earth Fill: will be measured in place and paid for by the cubic yard. The unit price shall include procurement, manpower and equipment necessary for the hauling and installation of Compacted Earth Fill as directed.

(14) Contractor Supplied Equipment for Special Projects: will be paid for on an hourly basis with a minimum of four (4) hours. Hourly rate shall include an operator, fuel, mobilization and any cost associated with maintaining the equipment.

1.3 Payment:

- A. Applications for Payment that have been prepared based on measurements described in this Section of the Specifications shall be processed in accordance with Section 14 of the General Conditions and the terms of the Agreement.
- B. Applications for Payment which are not based on measurements as described in this Section of the Specifications may be subject to delay while such measurements are made and/or discrepancies between measurements and the Applications for Payment are resolved.
- C. Ten Percent (10%) of the unit price bid for each item included on the application for payment shall be retained until completion of the project.

END OF SECTION

SECTION 04800 - PROJECT RECORD DOCUMENTS

PART 1 –GENERAL

1.1 SUMMARY

A. *This section specifies* administrative and procedural requirements for project record documents.

B. *Project record documents* required include:

1. Marked-up copies of Contract Drawings.
2. Marked-up copies of approved shop drawings.
3. Newly prepared drawings.
4. Marked-up copies of Specifications, Addenda, and Change Orders.
5. Marked-up product data submittals.
6. Field records for variable and concealed conditions.

C. *Specific record copy* requirements that expand requirements of this section are included in the individual sections of Division 2 through 16.

D. *General project closeout* requirements are included in Section 01700, Project Closeout.

E. *Maintenance of Documents and Samples.* Store record documents and samples in the field office apart from Contract Documents used for construction. Do not permit project record documents to be used for construction purposes. Maintain record documents in good order, and in a clean, dry, legible condition. Make documents and samples available at all times for inspection by the City of Calhoun Engineering Inspection Department.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplemental Conditions or General Provisions and other Division 1 specification sections, apply to this section.

1.3 RECORD DRAWINGS

A. *Mark-up Procedure.* During the construction period, maintain a set of blue- or black-line prints of Contract Drawings and shop drawings for project record document purposes.

1. Mark these Drawings to indicate the actual installation where the installation varies appreciably from the installation shown originally. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:

- a. Dimensional changes to the Drawings.
- b. Revisions to details shown on the Drawings.
- c. Depth of rock.
- d. Locations and depths of underground utilities.
- e. Revisions to routing of piping and conduits.
- f. Revisions to electrical circuitry.

- g. Actual equipment locations.
- h. Locations of concealed internal utilities.
- i. Changes made by Change Order.
- j. Details not on original Contract Drawings.

2. Mark completely and accurately record prints of Contract Drawings or shop drawings, whichever is most capable of showing actual physical conditions. Where shop drawings are marked, show cross-reference on Contract Drawings location.

3. Mark record sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of the work at the same location.

4. Mark important additional information which was either shown schematically or omitted from original Drawings.

5. Note construction change directive numbers, alternate numbers, Change Order numbers, and similar identification.

6. Responsibility for Markup: Where feasible, the individual or entity who obtained record data, whether the individual or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on record drawings.

a. Accurately record information in an understandable drawing technique.

b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.

7. At time of final acceptance, submit record drawings to City of Calhoun Engineering Inspection Department for Owner's records. Organize into sets, bind, and label sets for Owner's continued use.

1.4 RECORD SPECIFICATIONS

A. *Maintain one copy* of the project Specifications, including addenda and modifications issued, for project record document purposes during the construction period.

1. Mark the Specifications to indicate the actual installation where the installation varies substantially from that indicated in Specifications and modifications issued. Note related project record drawings information, where applicable. Give particular attention to substitutions, selection of product options, and information on concealed installations that would be difficult to identify or measure and record later.

1.5 RECORD PRODUCT DATA

A. *Maintain one copy* of each product data submittal for project record document purposes during the construction period.

1. Mark project data to indicate the actual product installation where the installation varies substantially from that indicated in product data submitted. Include significant changes in the product delivered to the site, and changes in manufacturer's instructions and recommendations for installation.

2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

3. Note related Change Orders and mark-up of record drawings, where applicable.

4. Upon completion of mark-up, submit a complete set of record product data to the City of Calhoun Engineering Inspection Department for the Owner's records.

5. Where record product data are required as part of maintenance manuals, submit marked-up product data as an insert in the manual, instead of submittal as record product data.

1.6 MISCELLANEOUS RECORD SUBMITTALS

A. *Refer to other specification sections* for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to final acceptance, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the City of Calhoun Engineering Inspection Department for the Owner's records.

1. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:

- a. Field records on excavations and foundations.
- b. Field records on underground construction and similar work.
- c. Survey showing locations and elevations of underground lines.
- d. Invert elevations of drainage piping.
- e. Surveys establishing building lines and levels.
- f. Authorized measurements utilizing unit prices or allowances.
- g. Inspections and certifications by governing authorities.
- h. Leakage and pressure test.
- i. Disinfection test results.
- j. Final inspection and correction procedures.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

RECORDING

A. *POST CHANGES AND MODIFICATIONS* to the documents as they occur. Do not wait until the end of the product. The City of Calhoun, Engineering Inspection Department will periodically review record documents to ensure compliance with this requirement.

END OF SECTION

SECTION 04900 - TESTING AND INSPECTION

1.1 Scope: This Section covers quality control requirements supplementary to those of the General Conditions and other Sections of the Specifications for Contractor supplied materials. Refer to Article 13 of the General Conditions.

1.2 Independent Testing Laboratories:

A. Concrete Mix Design: If mix design is required by the specifications, Contractor shall employ and pay a testing laboratory approved by the City of Calhoun Engineering Inspection Department to perform *job specific* concrete mix design and verification.

B. Construction Testing and Inspection of Concrete and Earthwork: Owner will employ an independent testing laboratory for field and laboratory quality control testing and inspection during the construction phase of the Work. All such quality control testing and inspection will be at Owner's expense, except that in the event that Owner's quality control testing indicates Contractor's failure to meet specifications, the cost of such tests and re-tests shall be borne by the Contractor.

C. Contractor shall:

(1) Coordinate, schedule, and furnish all required quality control sampling and testing; cooperate with all testing personnel; and, provide the equipment and labor required for all sampling, for preparation of samples, and for field testing.

(2) Properly transport samples to the testing laboratory as required.

(3) Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

(4) Should the Contractor engage a testing laboratory for any purpose in connection with the Work, instruct that laboratory to promptly send two signed copies of any and all job specific field inspection and/or laboratory testing reports to the City of Calhoun Engineering Inspection Department.

1.3 Equipment Testing: Notify City of Calhoun Engineering Inspection Department when specified equipment is ready for testing. All equipment start-up and testing shall be done in the presence of the City of Calhoun Engineering Inspection Department.

END OF SECTION

TECHNICAL SPECIFICATIONS

The Standard Specifications for Water and Sanitary Sewer Installations

- (A) *The Standard Specifications for Water and Sanitary Sewer Installations* (the *Specifications*) is subject to revisions and corrections. At the beginning of a project, users should verify that they have the latest edition.
- (B) The Standard Details are complementary to the *Specifications* written herein. If the Contractor notes any discrepancies or desires an interpretation of a specification, they should submit their question to the City Utilities Engineer in writing for a decision by the City.
- (C) The *Specifications* are intended to convey the general design and construction requirements for a typical project. It also lists specific City of Calhoun requirements relating to plan review, inspection, testing and acceptance of facilities. It is not intended as a substitute for site-specific engineering and construction techniques.
- (D) Failure by the City to notice any deviations from the plans and the *Specifications* does not alleviate the Contractor's responsibility to adhere to the *Specifications*.
- (E) List Of Commonly Used Terms
 - (1) "City" shall mean the City of Calhoun.
 - (2) "Contractor" shall mean the individual, firm or corporation undertaking the execution of the Work under the terms of the contract and acting through its agents and employees.
 - (3) "Engineer" shall refer to the City of Calhoun Utilities Engineer and to his properly authorized agents.
 - (4) "Owner" shall refer to the City of Calhoun.
 - (5) "Plans" shall refer to those drawings that show the character and scope of the work and shall include all drawings identified in the contract documents.
 - (6) "Specifications" and "Standards" shall refer to the City of Calhoun Standard Specifications for Water and Sanitary Sewer Installations.

100. Water Distribution Systems

A. Part 1 – General

1.1 Section Includes:

- A. Furnishing and installing water distribution pipes, valves, fittings, and other appurtenances, including reaction blocking, testing, and disinfection.

1.2 Related Work:

- A. SECTION 108 TRENCHING, BACKFILLING AND COMPACTION
- B. SECTION 104 WATER SERVICE CONNECTIONS

1.3 Reference Standards:

- A. All materials and installation shall conform to requirements of Georgia Rules for Safe Drinking Water Chapter-391-3-5, revised October 16, 1997 and Environmental Protection Division's *Minimum Standards for Public Water Systems*, January, 1998 edition.
- B. Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water (AWWA C104-95).
- C. Ductile-Iron Compact Fittings, 3 In. Through 24 In., for Water Service (AIRWA C153-94)
- D. Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings (AWWA C111-95).
- E. Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids (AWWA C151-96).
- F. Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure Rated Pipe (SDR Series) (ASTM-D 2241). **(Must be white in color).**
- G. Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds (ASTM D 1784).
- H. Poly (Vinyl Chloride) (PVC) Pressure Pipe, 4 In. Through 12 In. for Water Distribution (AWWA C900-89). **(Must be white in color).**
- I. Metal-Seated Gate Valves for Water Supply Service (AWWA C500-93).
- J. Dry-Barrel Fire Hydrants (AWWA C502-94).
- K. Resilient-Seated Gate Valves for Water Supply Service (AWWA C509-94).
- L. Air Release, Air/Vacuum, and Combination Air Valves for Water Works Service (AWWA C512-92)
- M. Installation of Ductile-Iron Water Mains and Their Appurtenances (AWWA C600-93).
- N. Underground Installation of PVC Pressure Pipe and Fittings for Water (AWWA C605-94).
- O. Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seal (ASTM D 3139).
- P. Elastomeric Seals (Gaskets) for Joining Plastic Pipe (ASTM F 477).
- Q. Disinfecting Water Mains (AWWA C651-92).

1.4 Submittals:

- A. Submit complete descriptions, including manufacturer's catalog data and operation and maintenance instructions, for all products for approval prior to shipment.
- B. Submit manufacturer's certification for all pipe, valves, hydrants, and fittings shipped to the job stating that specified tests have been made and the results thereof comply with applicable specifications.

- C. All similar products on a project shall be furnished by a single manufacturer, unless otherwise approved by the Engineer. For example, all of the PVC pipe on a given project shall come from one manufacturer.

1.5 Delivery, Storage, and Handling:

- A. Properly and safely unload, and store all material furnished until incorporated into the Work and accepted.
- B. Unload pipe, fittings, valves, and hydrants by lifting with hoists or skidding to avoid damage. Do not roll or drop off trucks. Do not skid or roll against pipe already on the ground.
- C. Unload material at the site of the Work near the place where it will be installed. Do not interfere with traffic or create safety hazard. Provide signs, lights, and barricades as necessary to protect the public.
- D. Keep interior of pipe, fittings, valves, hydrants, etc. free of all dirt or foreign matter at all times. Do not store materials in drainage ways or ditches.

- 1.6 Site Conditions: Reasonable quantities of water for construction, testing, flushing, and disinfection will be furnished by the City through connections to the Cities water system made by the City or the Cities Contractor upon coordination with City. Excessive usage may result in charges for water used.

B. Part 2 – Products

a) 2.1 Ductile Iron Pipe (DIP)

Manufactured in conformance with AWWA C151 and cement mortar lined in accordance with AWWA C104, standard thickness, with seal coat.

- A. Provide Pressure Class 350 for 4-in to 12-in. dia. pipe.
- B. Unless otherwise specified, the pipe shall have push-on compression type joints conforming to AWWA C111.
- C. Restrained joint (RJ) pipe, where specified, or indicated on drawings, shall consist of push-on compression type joint with a locking gasket with stainless steel locking segments vulcanized into the gasket to grip the pipe to prevent joint separation. Restrained joints shall be Fast Grip Gasket by American Cast Iron Pipe Co. or Field-Lok Gasket by U.S. Pipe Co., or equal approved by the Engineer.
- D. Restraining glands: MEGALUG glands by EBAA Iron Sales, Inc are acceptable for ductile iron pipe; other retainer glands with set screws are not acceptable.

b) 2.2 Plastic Pipe (PVC)

Polyvinyl Chloride (PVC) pipe conforming to all requirements of ASTM D 2241-89. PVC plastic extrusion compound shall meet the requirements of ASTM D 1784 for Class 12454-B (PVC 1120). **(Must be white in color).**

- A. Pipe and fittings shall be Standard Dimension Ratio 21 (SDR 21)
- B. Pipe and couplings shall bear the National Sanitation Foundation Testing Laboratories, Inc. (NSF) seal of approval for potable water use.
- C. Pipe joints shall be integral push-on type complying with ASTM D 3139, designed to provide for the thermal expansion or contraction experienced with a total temperature change of at least 75°F in each length of pipe.
- D. Gaskets shall be vulcanized natural or synthetic rubber conforming to AWWA C111 and ASTM F 477.

c) 2.3 Ductile Iron Fittings

DIP and PVC pipe shall have ductile iron fittings. Fittings shall conform to AWWA C153 for diameters through 24 inches. Fittings shall be pressure rated 350 psi.

- A. Fittings shall be cement mortar lined in accordance with AWWA C104, standard thickness, with seal coat. *Interior walls shall be smooth and free of defects.*
- B. Fittings shall be mechanical joint (MJ) unless otherwise specified on the Drawings.
- C. Fittings used on restrained joint (RJ) pipe shall be restrained joint fittings with push-on compression type joints equal to those specified for restrained joint ductile iron pipe.
- D. Rubber gasket joints shall conform to AWWA C111.
- E. Gaskets for PVC pipe shall be plain rubber transition type compatible with the type of pipe and fittings used.

d) 2.5 Gate Valves

Resilient Seat type shall conform to AWWA C509 for resilient-seated, iron body, bronze mounted gate valves by Mueller. All 12 inch and smaller valves shall be rated for 200 psi.

- A. Body Type: Mechanical joint unless specified otherwise on the Drawings.
- B. Resilient Seat: Resilient rubber seat ring.
- C. Stem and Seal: Bronze, non-rising stem (NRS), unless shown otherwise on the Drawings; O-ring seals.
- D. Operator: Manual operating nut, 2 inches square, unless shown otherwise on the Drawings; valve to open when turned to the left (counter-clockwise).

e) 2.6 Small Gate Valves

Valves smaller than 4 inches shall conform to the level of quality and manufacturing standards established for valves 4 inches and smaller, by the respective AWWA Standards. *All small gate valves shall be rated for 200 psi working pressure.*

- A. Two inch valves shall be Mueller A21360-8 w/2" operating nut.
- B. Valves 1-1/2 inch and smaller shall be bronze body, rising stem, solid wedge disc, MATCO 503 (Threaded), or equal approved by the Engineer.

f) 2.7 Air Release Valves

AWWA C512, designed for minimum 200 psi working pressure, ductile iron body, threaded connections, stainless steel float, Buna N seat; with all internal trim stainless steel or bronze by Crispin or approved equal. Size shall be 1" inlet, 1/2" outlet, 3/16" orifice, unless otherwise specified or shown.

g) 2.8 Fire Hydrants

Conform to all requirements Of AWWA C502 for dry-barrel fire hydrants, traffic type, with safety flange which allows the valve to remain closed when the hydrant is broken or damaged above or near the grade level. All fire hydrants shall be Mueller Super Centurion A-423.

- A. Size: Hydrant main valve opening 5-1/4 inches. Inlet shall be 6 inch, mechanical joint, with strapping lugs. Fire hydrants located in unincorporated Gordon County or connecting counties must be Mueller Super Centurion A-423 with main valve opening as required by that county. Fire hydrants installed within the City Limits of Calhoun must be equipped with a STORZ connection on the pumper nozzle.
- B. Bury: Unless otherwise specified, bury shall be 3-1/2 feet, with at least 17 inches from centerline of nozzles to bury line. Use adjustable coupling pipe and/or vertical extensions to bring the hydrant to proper finished grade.
- C. Outlet Nozzles: Two 2-1/2 inch dia.; one 4-1/2 inch dia. Nozzle threads shall conform to those in service where the hydrant is to be installed unless otherwise specified. Provide field replaceable nozzle threads.
- D. Stem Seals: O-ring.
- E. Valve: Compression type closing with pressure. Facings shall be rubber.
- F. Color: To be selected by Owner.
- G. Barrel Drain: Provide integral drain outlet.
- H. Anchoring: (See Detail) Use Fire Hydrant Tees and Anchor Couplings unless otherwise approved.

h) 2.10 Piping Accessories

Any accessories required shall be compatible with pipe and fittings used. Small valves, pipe, and fittings shall conform to AWWA Standard C800-89.

A. Tapping Sleeves for PVC and DIP mains shall be PowerSeal Model 3490 or Robar Model 6606. Tapping sleeves for CIP mains shall be Muller Model H-615. For tapping saddle specifications see Section 104, paragraph B, 2.6 - Service Saddles.

B. Couplings for 4-in. and smaller pipe: Dresser Style 38.

i) 2.11 Manhole for air released valves or check valves

Precast concrete conforming to ASTM C478-88, with cast iron cover, NEENAH R-6041A for cast-in-slab, or R-1776 if not cast-in-slab type.

j) 2.12 Water meter box for air-release valve

If air release valves meter box is required in non-traffic area, Quazite 27" Round Box; or similar meter box approved by the Engineer.

k) 2.13 Valve Boxes

Cast iron, 5-1/4 inch diameter, two piece screw type adjustable to suit the depth of bury. Provide extension stem if required so that no operating nut is deeper than 5 feet below the cover. Cover shall be cast iron, marked "WATER."

C. Part 3 - Execution

a) 3.1 Preparation:

A. Perform demolition, clearing and grubbing as required.

B. Install erosion and sediment control measures as required.

C. Strip and stockpile all sod topsoil suitable for reuse in restoration.

D. Remove pavement only as necessary for excavating the trench and installing the pipeline and appurtenances. Cut asphalt pavement in straight, uniform lines by means of a suitable pavement saw. Cut concrete pavements to a depth of at least 2 inches along the cut line with a rotary saw, after which the pavement may be broken with a jack hammer.

E. Provide protection of utilities by notifying all local utility owners and, with an electronic pipe locator and their assistance, locate underground structures, pipes and utility lines, and mark them in advance of trenching operation. Excavate and expose underground utilities in test pits to verify locations and depths. As excavation approaches the marked areas, digging with extreme care if using conventional trenching machines. Promptly restore utilities or structures damaged by construction activities to their original condition before the damage occurred. Upon Contractor's

failure to promptly correct such damage, the City may correct the damage and back-charge the Contractor for costs incurred.

- F. As part of the trenching operations, perform removal, relocation, or relaying of pipes, utility lines, and appurtenances which will obstruct the completed water mains or appurtenances.
- b) 3.2 Trenching, Back filling and Compaction
Conform to requirements of Specification Section 6.
- c) 3.3 Bedding
Bedding shall conform to the individual requirements for the pipe or conduit material being used. Unless otherwise specified or shown on the Drawings, bedding shall be Class D for ductile iron pipe and Class C for Plastic Pipe.
- d) 3.4 Alignment, Grade and Cover:
- A. Install pipe and appurtenances at the locations, positions, alignments, and grades shown on the Drawings. In the event of conflict, install as directed by the Engineer.
 - B. Provide **36 inches of cover** measured from finished grade to top of pipe barrel unless otherwise shown on drawings. Where obstructions are encountered, the depth may be greater than 36 inches. Depths of cover less than 36 inches may be used only when directed by the Engineer, and do not lay pipe with greater than 48 inches of cover unless specifically approved by the City Engineer.
 - C. Install pipe such that valves and hydrants will be vertical.
 - D. Maintain pipe curvatures with the horizontal or vertical permissible deflection at joints, as specified by the manufacturer or AWWA specification C600.
- e) 3.5 Installing Pipe
- Install pipe and appurtenances only when trench conditions are suitable. Trenches must not contain water that can enter open end of pipe. Proper implements, tools, and facilities shall be provided by the Contractor for the safe and convenient performance of the Work.
- A. Lower all pipe, fittings, valves, and hydrants carefully into the trench piece by piece by means of a derrick, ropes, or other suitable tools or equipment. Prevent damage to water main materials and protective coatings and linings. Do not drop or dump water line materials into the trench.
 - B. Carefully examine all pipe and fittings for cracks and other defects while suspended above the trench immediately before installation in final position. Defective pipe or fittings shall be clearly marked and shall be removed from the site.
 - C. Clean the interior and bell and spigot ends of each piece of pipe thoroughly before the pipe is laid.

- D. Prevent foreign material from entering the pipe while it is being placed in the line. If necessary, provide protective covering for the ends of the pipe until the connection is to be made to the adjacent pipe. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe.
- E. As each length of pipe is placed in the trench, center the spigot end in the bell, force the pipe home and bring to correct line and grade. Secure the pipe in place with approved backfill material tamped around it. Take precautions to prevent dirt from entering the joint space.
- F. At times when pipe laying is not in progress, close the open ends of pipe with a watertight plug. Buckets, tape, etc. are not acceptable. Maintain plug in place until the trench is pumped completely dry.
- G. Lay pipe with bell ends facing in the direction of laying, unless directed otherwise by the Engineer. Where pipe is laid on a grade of 10 percent or greater, start the laying at the bottom and shall proceed upward with the bell ends of the pipe upgrade.

f) 3.6 Cutting Pipe

Use pipe-cutter for inserting valves, fittings, or closure pieces in a neat and workmanlike manner without damage to the pipe or lining. Cut at right angles to the axis of the pipe.

g) 3.7 Tracing Wire Installation

- A. Install one continuous strand of tracer wire and over all water mains (of all pipe materials).
- B. Place the tracing wire directly on the pipe and secure it to the pipe with tape every 8-10 feet to insure that the wire remains adjacent to the pipe. The tracer wire shall be securely bonded together at all wire joints with approved watertight connectors to provide electrical continuity.
- C. The wire shall be #12 AWG Copper Clad Steel (.0808" diameter) high strength tracer wire, and insulated with a 30 mil high density polyethylene blue jacket complying with ASTM-D-1248 (Copperhead Reinforced Tracer Wire or approved equal).
- D. Proper connectors, which protect from moisture and corrosion, are required. Wire splices shall be connected using Copperhead SnakeBite or 3M DBR connectors. Do not tape the wire together.
- E. Install test stations to access the trace wire at intervals of no more than five-hundred (500) feet. Each valve, with valve box, shall serve as a trace wire access point by pulling the wire up into valve box to within 2 inches of top of valve. Where valves are not available for use as an access point, an access point station shall be created by coiling 3 feet of wire into a standard plastic meter box. Trace wire access points shall be within public right-of-way or public utility easements.

- F. For boring installations, tracing wire shall be installed inside the casing, with the pipe, and connected at both ends of the bore with an approved watertight connector. An access point station shall be installed within 50 feet of both ends of a bored roadway or railway crossing.
- G. The Contractor shall perform a continuity test on all trace wire in the presence of the Engineer or the Engineers' representative. Introducing a small electrical charge to the tracing system during testing will enhance the test results. If the trace wire is found to be not continuous after testing, the Contractor shall repair or replace the failed segment of the wire.

h) 3.8 Jointing

Provide jointing of all pipe, fittings, valves, and hydrants in strict compliance with manufacturer's instructions.

- A. Mechanical Joints: Tighten all nuts with torque limiting wrench. Nuts space 180 degrees apart shall be tightened alternately in order to produce equal pressure.
- B. Push-on Joints: Furnish and install adaptor as required to join bells and spigots of different sizes. Complete joint by forcing the plain end to the bottom of the socket with a forked tool or jack-type tool.
- C. Restrained Joints: Follow same procedure as for push-on joints and manufacturer's procedure for type of restrained joint installed.

i) 3.9 Setting of Valves--and Fittings:

- A. Set valves plumb. Tamp backfill around valves carefully in 6 inch layers for the full depth of trench with valve box in place. All pipe nipples between valves and fittings shall be Ductile Iron.
- B. Provide a valve box and C.I. lid for every valve. For valves in areas that will not be paved, use 6" PVC pipe riser in lieu of C.I. box. The valve box or riser shall not transmit shock or stress to the valve, with the box cover flush with the surface of the finished pavement or such other level as may be directed. Provide an extension stem on any operating nut that is greater than 5 feet below the valve box lid. Provide a precast (circular) concrete collar for all valves.

j) 3.10 Setting of Hydrants

Set all hydrants plumb with small nozzles parallel with the street and pumper nozzle facing the street, unless otherwise specified. Provide anchoring fittings, valve, and coupling pipe. All materials from the tee to the fire hydrant shall be ductile iron. Rotate coupling pipe for proper bury of hydrant. If additional adjustment is required to match the "bury line" with finished grade after backfill, use vertical fire hydrant extension.

k) 3.11 Thrust (Reaction) Blocking

Provide blocking for all plugs, caps, tees, bends, hydrants, etc. unless otherwise specified.

- A. Blocking shall be purchased Ready-Mix concrete having a compressive strength of not less than 3,000 psi at 28 days. Place blocking between solid, unexcavated earth and the fitting to be anchored. The area of bearing on the pipe and on the ground in each instance shall withstand thrust forces created by the specified test pressure. In no instance shall the bearing area be smaller than shown on the Drawings for firm, dry clay (3000 lb. per sq. ft.). Where soils of lesser bearing capacity are encountered, increase bearing area dimensions as necessary. All blocking shall be placed such that the joints will be accessible for repair, unless otherwise shown or directed
 - B. Metal harnesses, tie rods, or clamps may not be used except in special situations specifically approved by the Engineer.
- l) 3.12 Connection to Existing Mains:
- A. Coordinate connections to existing water facilities with the City of Calhoun Water Construction Department and do not make connections to existing mains without specific approval of time of day and allowable duration of service disruption.
 - B. All connections to existing main will be done by City of Calhoun unless otherwise approved.
- m) 3.13 Stream and Utility Crossings
- Where indicated on the Drawings, or required by conditions encountered, place pipe beneath stream beds or ditches, around, over, or under storm sewers, culverts, gas mains, telephone ducts, buried cables, other water mains, or other structures.
- A. Do not pass pipe through any structure, drainage pipe, culvert, sewer, or manhole, etc.
 - B. Provide minimum cover of 36 inches under bottom of stream beds or ditches, except that required cover at stream crossings in rock may be reduced to 18 inches where approved by the Engineer. Perennial stream crossings shall be reviewed on an individual basis, ductile iron pipe or river crossing pipe may be required.
 - C. Provide minimum of 6 inch cushion of earth or sand between proposed water line and any other utility or structure.
 - D. If practical, provide at least 10 feet horizontal and 18 inches clear vertical separation at all structures and other utilities. Where it is not possible to obtain at least 18 inches of vertical separation from other utilities, use an 18 ft. joint of DIP centered at the point of crossing.
- n) 3.14 Sanitary Sewer Separation:
- Use special precautions to maintain minimum separation distances between water main and any existing or proposed gravity, or pressure, sanitary sewer.
- A. Where practical, maintain a minimum vertical separation of 18 inches between the outside of the water main and the outside of any sanitary sewer. Arrange the

crossing so that the water main joints will be equidistant and as far as possible from the sewer joints. Where a water pipe must cross a sewer, provide adequate structural support and protection for the sewer to prevent damage.

- B. To the maximum extent practical, maintain at least ten (10) feet of horizontal separation between the water main and any existing or proposed sanitary sewer. Under no circumstances shall the sanitary sewer and a water main be laid in the same trench.
- C. Notify City's Representative immediately upon encountering field conditions that do not allow at least 18 inch vertical between the water main and any existing or proposed sanitary sewer. Where it is not possible to obtain at least 18 inch vertical separation, use 18 ft. length of DIP, or copper pipe, for the water main centered on the sanitary sewer at the point of crossing.

o) 3.15 Hydrostatic Test

Perform pressure and leakage tests on each section of the pipe between valves in accordance with AWWA C600. When a section of pipe of a length deemed adequate by the Engineer is ready for testing; the pipe shall be thoroughly blown free of air and prepared for testing. Test must be witnessed by the City of Calhoun Engineering Inspection Department. A 48 hour notice must be given prior to testing. **Testing shall be done after all other utilities are installed.**

- A. Furnish and install corporation stops at all high points on the pipe to release air as pipe is slowly filled with test water. Air must be removed prior to testing. **Prolonged flushing of water to remove air will not be allowed.**
- B. Furnish suitable test pump, connections, pressure gages, and all necessary apparatus including means for accurately measuring water introduced into the pipe during testing. Taps for testing shall be installed by the contractor. Water for testing, flushing or other purposes must be metered (See Fee Schedule). Water amounts used for flushing shall be determined by calculating the flows at 2.5 feet/sec. The contractor shall be allowed to open, throttle or operate any water valve attached to the City of Calhoun Water Distribution System.
- C. Maintain full test pressure for a **minimum of 2 hours**. Maintain 200 pounds per square inch (psi) for pipe 16-in. and smaller; maintain 150 psi for pipe larger than 16-in. Pressure shall not vary by more than 5 psi during the test.
- D. The length of pipe included in a pressure test shall be limited to reasonable segments of pipe as directed by the Engineer because of topography or other conditions which might prevent a valid test. **Maximum lengths shall be from main line valve to main line valve.**
- E. Concurrently with the pressure tests, conduct leakage tests on all pipe. Maximum allowable leakage shall be 12 gallons per mile of pipe per inch of nominal diameter per day.
- F. Locate, remove, and replace all defective pipe, valves, fittings, or hydrants. Clamps or other repair devices shall not be used.

G. Repeat pressure and leakage tests until results are satisfactory to the Engineer.

p) 3.16 Disinfection

Thoroughly clean, flush, disinfect, and drain all installed pipe, fittings, valves, and appurtenances or other facilities exposed to contamination by the construction. Disinfect strictly in accordance with AWWA Specification C651. **Disinfection shall be done after all other utilities are installed.**

- A. Prior to disinfection, coordinate with the City of Calhoun Engineering Inspection Department for providing connections to a source of clean water. The contractor shall provide adequate outlet pipe for disposal and dechlorination of flush water. Provide adequate backflow protection as approved by the Engineer. Distribution valves shall be operated by City of Calhoun personnel. Thoroughly flush the pipe lines, producing a minimum velocity of 2.5 feet per second in pipe for as long as necessary to clean out all silt and debris (See Fee Schedule). Flushing shall be done in presence of City's Representative.
- B. After flushing has been completed and accepted, disinfect pipe using liquid chlorine or hypochlorite to produce a dosage of 50/mg/L for a 24 hour contact period. Contractor shall dispose of chlorinated water as per requirements set forth by The Georgia Department of Natural Resources, Environmental Protection Division.
- C. Open and close each valves within the test segment of pipe several times during disinfection period.
- D. After at least 24 hour retention period, flush chlorinated water from the line until chlorine concentration of water leaving the main is no higher than that generally prevailing in the existing system, or less than 1.0 mg/l. Contractor shall dispose of chlorinated water as per requirements set forth by The Georgia Department of Natural Resources, Environmental Protection Division.
- E. Provide corporation stop or similar connection and obtain samples for bacteriological analysis by City.
- F. Repeat disinfection procedure until bacteriological analysis results are acceptable to the City and the local Health Department.

END OF SECTION

101. Water Service Connections

A. Part 1 – General

1.1 Section Includes:

A. Furnishing and installing materials and making service connections to the water system.

1.2 Reference Standards:

A. Underground Service Line Valves and Fittings (AWWA C800-89).

B. DR-9 HDPE copper tube size tubing, ASTM D3035-15.

C. Cast Copper Alloy Solder Joint Pressure Fittings (ANSI/ASME B16.18).

D. Cold-Water Meters - Displacement Type (AWWA C700-95).

B. Part 2 – Products

a) 2.1 General

The following guide to the standard materials to be used.

b) 2.2 Service Tubing

3/4 inch or 1 inch diameter copper water tube, DR-9 copper tube size tubing, ASTM D3035-15.

c) 2.3 Meter Setters

Ford VHH72-7W for 5/8" x 3/4" meter. Provide 3/4" yoke nut, Ford 9880 Union Nut and 3/4" Compression fit Male x Comp, Ford C84-339.

d) 2.4 Meter Boxes

Cast iron body, and ASTM A48, Class 30 Gray Iron lid marked "WATER METER" with hole for touch read meter. Minimum dimensions 9 5/8" x 19" long x 16" deep.

e) 2.5 Accessories

Install all required accessories in conformance with AWWA Standard C800 and City standard practice using Ford or Mueller brass products approved by City.

f) 2.6 Service Saddles

For PVC pipe 8 inches and smaller: Power Seal Type 3401 Bronze Strap. For pipe larger than 8 inches: Dresser 291, double strap; 3/4 inch tap size. Ductile Iron Main, 6-in and larger may be direct tapped.

g) 2.7 Water Meters

City will furnish and install water meters, which will be 5/8 in. x 3/4 in. positive displacement type, frost-proof design, meeting AWWA Standard C700.

C. Part 3 – Execution

a) 3.1 General:

- A. Install service tubing and connections in the same manner as water distribution mains;
- B. Make service connections at locations directed by the City Engineer.
- C. Place meter boxes within the public right-of-way at the property line in an accessible location, unless otherwise directed by the City.

b) 3.2 Installation:

- A. Make all service connections in accordance with the Standard Service Connection detail on the Drawings.
- B. Set meter box level, on well compacted earth, and such that stormwater will not accumulate on or in the meter box.
- C. Upon completion and acceptance of Contractor's Service Connection installation, the City will set meter and activate the service, after the water tap fee has been paid.
- D. Install one continuous strand of #12 AWG Copper Clad Steel high strength tracer wire, and insulated with a 30 mil high density polyethylene blue jacket complying with ASTM-D-1248 (Copperhead Reinforced Tracer Wire or approved equal) directly under the pipe. Pull wire up equal with the end of the service tubing. Wire splices shall be mechanically connected by approved methods. Do not tape the wire together.

END OF SECTION

102. Gravity Sanitary Sewers

A. Part 1 – General

a) 1.1 Section Includes:

- A. Furnishing, installing, and testing gravity sanitary sewers and service laterals. Unless otherwise specified or indicated on the Drawings, only smooth-wall PVC pipe shall be used. Ductile iron pipe or steel pipe shall be used only in special applications as indicated on Drawings, or as directed by the Engineer.

b) 1.2 Related Work:

- A. SECTION 106 – MANHOLES AND ACCESSORIES
B. SECTION 108 – TRENCHING, BACKFILLING AND COMPACTION

c) 1.3 Reference Standards:

- A. Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings (ASTM D 3034-89).
B. Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications, (ASTM D 2321-89).
C. Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals (ASTM D 3212-92).
D. Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe (ASTM F 477-90).
E. Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings (ASTM F 679-89)
F. Standard Specification for Ductile Iron Gravity Sewer Pipe (ASTM A 746-86).

d) 1.4 Submittals:

- A. Submit manufacturer's certifications for all pipe and related materials shipped to the job site stating that all specified tests have been made and the results thereof comply with the requirements of this Specification. Each certificate shall be signed for the manufacturer by a person having legal authority to bind the manufacturer.
B. All similar products on a project shall be furnished by a single manufacturer, unless otherwise approved by the Engineer. For example, all of the PVC pipe on a given project shall come from one manufacturer.

e) 1.5 Delivery, Storage, and Handling:

- A. Inspect pipe prior to acceptance of delivery for dimensions and to ensure the absence of fractures, cracks damaged ends, markings and other defects.

- B. Deliver pipe and joint materials to the job site and store in accordance with the manufacturer's recommendations. Make whatever special arrangements are necessary to provide such storage.
- C. Take special care to avoid deformation or compression of PVC pipe ends. Store pipe in unit packages provided by the manufacturer.

B. Part 2 - Products

a) 2.1 Smooth Wall Poly Vinyl Chloride (PVC) Pipe and Fittings

Type PSM Pipe which is 12" or less in diameter shall conform to requirements of ASTM D 3034 for SDR 26. Sewer pipe 16" or larger shall conform to Section 2.2.

- A. Nominal length 13 ft.
- B. Integral bell and spigot "O" ring joints conforming to ASTM D 3212-92 with gaskets conforming to ASTM F 477-90.
- C. Sanitary sewer PVC pipe shall be solid green in color.
- D. Fittings for PVC sewer pipe shall be PVC push-on type manufactured in accordance with the same specifications as pipe and pipe joints.

b) 2.2 Ductile Iron Pipe (DIP)

DIP sewer pipe shall conform to the requirements of ASTM A 746 for Thickness Class 50, unless otherwise specified or shown on the Drawings, cement-mortar interior lining and bitumastic coating on the outside. Nominal laying length 18 to 20 ft.

- A. Fittings may be cast or ductile iron manufactured in accordance with AWWA C153 or C110.
- B. Joints shall be push-on joint with lubricated rubber gaskets provided by the pipe manufacturer in accordance with AWWA C111.
- C. Transition from Ductile Iron Pipe to PVC Pipe shall be accomplished with a Harco Fitting.

c) 2.3 Service Laterals Pipe and Fittings:

- A. Service laterals and fittings, excepting clean-out caps which must be of brass construction, shall be of the same material and conform to the same specifications as the main sewer to which they are connected, unless otherwise shown on the Drawings, or otherwise required by local plumbing code. Local plumbing code shall govern those sewer services outside of the public rights-of-way or easements only.
- B. Wyes, Tee-Wyes or Combination Tee-Wyes may be used. Standard tees are not acceptable (except when used for a vertical riser).

- C. Service laterals shall be 4 inches (4") or 6 inches (6") diameter (I.D.) as shown on the Drawings, or as directed by the Engineer.
- D. Sewer service laterals shall not extend past the right-of-way.
- E. Service lines shall be DIP if installed at a depth of 15' or greater. Once a depth of less than 15' is achieved, the pipeline material can be transitioned to PVC by using a HARCO coupling.

C. Part 3 - Execution

a) 3.1 Preparation:

- A. Prepare trenches in accordance with Section 5 and the pipe manufacturer's recommendations.
- B. Provide construction stake-out and verify inverts.
- C. Examine all pipe and fittings. Mark damaged pipe and fittings in such a manner that identification is permanent and easily recognizable, and immediately remove such pipe from the job site.
- D. Clean all pipe of all debris prior to placing in the trench and jointing.

b) 3.2 Trenching, Back filling, and Compaction

Conform to Specification Section 5.

c) 3.3 Bedding

Provide bedding appropriate for the pipe material being used and the site conditions encountered. Specific bedding requirements are as follows:

- A. Smooth Wall PVC: Install and bed PVC sewer in accordance with ASTM Practice D 2321. Provide Class B "Modified" bedding using crushed stone, or approved granular material, from 4 inches below the pipe up to 6" above the top of the pipe.
- B. DIP: Install Ductile Iron Sewer in Class C bedding, unless directed otherwise by the Engineer. Class D bedding is not acceptable.
- C. Carefully excavate areas under bells sleeves, etc. for all types of pipe and backfill to ensure uniform bedding and for support for the entire length of pipe.
- D. Compaction test shall be required for sanitary sewers to be installed in areas where subgrade is in a fill section. Sub-grade shall be compacted to a minimum of 95% Standard Proctor Density. Test shall be conducted by a licensed testing lab and results shall be submitted to the City of Calhoun Engineering Department prior to any installation of sanitary sewers in areas as described herein.

d) 3.4 Installation of Pipe and fittings:

- A. Unload, store, lay, joint, and backfill all pipes and fittings pipe in strict accordance with the manufacturer's printed instructions and recommendations.
- B. Carefully examine all pipe and fittings for cracks or other defects before being lowered into the trench. Remove all damaged pipe or fittings from the site immediately.
- C. Carefully grade the bottom of the trench and excavate bell holes. Lay each pipe to the line and grade shown on the Drawings, or as directed by the Engineer. Accuracy of the finished line and grade of the pipe shall be obtained in the preparation of the trench bottom. Do not lay on blocking of any kind. Where finished work does not conform to the specified grades and inverts, adjust the grades as required.
- D. Lay pipe only in dry trenches.
- E. Gravity sewer pipe shall be installed from downstream to upstream, unless specific permission is granted by the City Utilities Engineer. Lay the pipe segments with the bell end upstream and the spigot end pointing downstream. All sewers shall be laid in a straight alignment and show a uniform grade between manholes.
- F. Take special care that each spigot is properly centered in the bell of the preceding pipe and that each pipe is solidly bedded so that settlement does not occur. Thoroughly clean the pipe. Apply jointing material as recommended by the manufacturer. After each joint is made, check for proper position prior to installation of the next length of pipe.
- G. Keep the interior of the pipe clear of all dirt and superfluous material of every description as the work progresses.
- H. When the pipe laying is suspended, either at night or at other times, close the end of the pipe with a water-tight cover.
- I. Provide testing data for all areas where sanitary sewer mains or service laterals are scheduled to be installed on fill sections. Testing shall be conducted at a minimum of one test per one- hundred linear feet and one foot vertical. The fill shall be compacted to 95% Standard Proctor Density. Submit all test data prior to installing sanitary sewer mains or laterals.

e) 3.5 Sewer Installation at Streams, Drainage Structures, and other Utility Crossings

Where indicated on the Drawings, or required by field conditions, install sewer beneath stream beds or ditches. Install sewer around, over or under other sewers, culverts, gas mains, electrical conduits, telephone ducts/cables, or other similar structures.

- A. If a minimum cover of 36 inches cannot be maintained for sewers passing under streams or drainage ditches, use ductile iron pipe for the sewer.
- B. Do not extend the sewer through any drainage pipe, culvert, or other structure.
- C. Provide minimum of 6 inch thickness of earth or sand cushion between proposed sewer and any other pipe or structure.

f) 3.7 Water Main Separation

Use special precautions to maintain minimum separation distances between sewer and any existing or proposed water main.

- A. Where practical, maintain a minimum vertical separation of 18 inches between the outside of any water main and the outside of the sewer. Arrange the crossing so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a sewer pipe must cross a water main, provide adequate structural support and protection for the water main to prevent damage.
- B. To the maximum extent practical, maintain at least ten (10) feet of horizontal separation between the sewer and any existing or proposed water main. Under no circumstances shall the sewer and a water main be laid in the same trench.
- C. Where proposed sewer unavoidably conflicts with an existing water main, relocate the water main to maintain at least 18 inches of vertical separation under or over the sewer. Reconstruct the conflicting water main with ductile iron pipe or copper pipe, 18 ft. minimum length, centered at the sewer. Coordinate all water main relocation with the City and perform all water main reconstruction in strict conformance with water system requirements.
- D. Notify the City Engineer immediately upon encountering field conditions that do not allow at least 18 inch vertical and/or 10 ft. horizontal separation between sewer and any existing or proposed water main. Where it is not possible to obtain at least 18 inch vertical separation, use 18 ft. length of DIP pipe for the sewer centered on the water main and designed and pressure tested as a water main; or as an alternate, encase the sewer in concrete.

g) 3.8 Installation of Service Laterals

(Applies to laterals in the street and to laterals on private property or easements).

- A. Install laterals in the same manner as sewer main with the same bedding and backfill.
- B. Install wyes and laterals in the street, or in easements, at the same time that the main sewer is installed. Install street laterals to the edge of right-of-way or edge of easement, or 4 feet from main sewer, whichever is greater.
- C. Temporarily plug street laterals when pressure testing the main. Install clean-outs as per the detail and include an "O" ring gasket, if necessary, to seal lateral. Clean-outs are to be located at the right-of way line or the edge of the sanitary sewer easement, as applicable.
- D. Lay all laterals to a uniform line and at grades no less than $\frac{1}{4}$ of an inch per foot of fall. No service lateral shall be covered until it has been inspected by the City.
- E. For service laterals in street rights-of-way or in easements: Provide non-degradable plastic tape 6" x .004" with the words "Caution Sewer Pipe" placed not less than 18 inches above the pipe and not less than 12 inches below grade. Provide #12 AWG Copper Clad Steel high strength tracer wire, and insulated with a 30 mil high density polyethylene green jacket complying with ASTM-D-1248 (Copperhead Reinforced Tracer Wire or approved equal) under pipe from main line to rights-of-way. Service laterals must not be installed

less than forty-five degrees to tangent of the sewer main. Service laterals may not be installed parallel along rights-of-ways in order to shorten main sewer.

- F. Install wyes at 45 degrees from the horizontal except where the Engineer directs otherwise.
- G. In trenches eight feet or more in depth use a tee with a vertical riser as shown on the Drawings and 45 degree or less bends in all cases. No 90 degree bends will be permitted.
- H. For service laterals on private property: Provide clean-outs at each change of grade or direction, at the edge of rights-of-way, as detailed on the Drawings, and as required by local plumbing code.
- I. Service laterals shall not be installed into manholes except where approved in writing by the Calhoun Utilities Engineer.

h) 3.9 Inspection and Tests:

- A. All material and work shall be subject to inspection by the City's representative at any time. All inadequate, defective, or improper work or materials will be rejected and the Contractor will be required to replace or reconstruct the work.
- B. Before calling for inspection of the installed pipe, flush clean of all water, sand, dirt, debris, or other obstructions. A 48 hour notice must be given prior to testing.
- C. Provide labor, supplies, and equipment for lamping the completed sewers in the presence of the Engineer. Inspect each section of sewer by lamping from manhole to manhole. Any section of sewer which does not exhibit a smooth, straight, "full-moon" bore will be rejected.
- D. Conduct deflection tests on PVC sewers in the presence of the Engineer. Tests shall consist of free passage of a properly sized mandrel or sewer ball. Maximum deflection shall be 5%.
- E. Conduct tests of all gravity flow pipelines, main sewers, and laterals for water-tightness in the presence of the Engineer. Laterals shall be installed to the edge of the right-of-way and temporarily plugged prior to testing. (However, laterals may be installed to the point of tie-in, at the Contractor's option.) Temporary restraints may be required for clean-outs and plugs for testing. Perform both of the following tests:
 - (1) Infiltration Testing: The pipeline shall not leak under exterior groundwater pressure. The pipeline shall be considered a dry line before acceptance.
 - (2) Air Testing: Also perform low pressure air testing in accordance with ASTM C 828 for all pipes. Allowable leakage will be based on an allowable loss of 0.003 ft.³/min. /ft.² of surface area using an initial pressure of 3.5 psi.
- F. Gravity flow pipelines which fail water-tightness tests shall be repaired, or replaced if directed by the Engineer, and re-tested.

i) 3.10 Clean-up and Restoration

Remove any and all material not used (including excess excavation) and rubbish of every character from the job site. Restore all fences and other private or public facilities and structures disturbed in essentially as good condition as existed before the work was done. Replace or repair any subsequent settlement of pavement or backfill, or erosion, over or in the trenches and bring the surface to grade. Take special precautions to prevent stormwater erosion of trenching. Keep stormwater culverts and structures cleaned of mud, debris, and silt caused by the construction. Restore any and all items disturbed by the construction to their original condition as soon as possible after disturbance and maintain the site until final acceptance.

END OF SECTION

103. Manholes and Accessories

A. Part 1 - General

a) 1.1 Section includes:

- A. Furnishing all labor, materials, supplies, and equipment necessary for the construction of manholes and manhole accessories for water distribution systems, sanitary or storm sewers.

b) 1.2 Related Work:

- A. SECTION 108 - TRENCHING, BACKFILLING AND COMPACTION
B. SECTION 105 - GRAVITY SANITARY SEWERS

c) 1.3 Reference Standards:

- A. Standard specification for Precast Reinforced Concrete Manhole Sections (ASTM C 478-90b).
B. Standard Practice for Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures (ASTM C 890-85).
C. Standard Practice for Installation of Underground Precast Concrete Utility Structures (ASTM C 891-90)
D. Standard Specification for Resilient Connectors between Reinforced Concrete Manhole Structures, Pipe and Lateral (ASTM C 923-89).

d) 1.4 Submittals:

- A. Submit Shop Drawings for precast sections, steps, pipe joint seals, and frames and covers before placing orders to suppliers for the job.
B. Provide manufacturer's certifications that all manholes and accessories have been manufactured in accordance with this Specification and that they meet all the criteria referenced herein. Provide certified test results for manhole steps.

e) 1.5 Delivery, Storage and Handling

Inspect manholes and accessories immediately upon delivery to ensure that no damaged or unsatisfactory materials are allowed on the job.

B. Part 2 - Products

a) 2.1 Precast Manholes

Manufactured in accordance with ASTM C 478. All manhole sections shall be precast (wet-cast manholes only) and furnished by the same manufacturer, unless otherwise approved by the Engineer.

- A. Riser Sections: 4, 5 or 6 feet in diameter as required, with reducer rings for base sections of diameter greater than 4 feet. Riser sections less than eighteen inches in height shall not be accepted without written approval from the City Engineering Manager.

- B. Top Sections: Eccentric cone or concentric top sections for manholes deeper than 5.5 feet; and flat slab tops for manholes 5.5 feet or less in depth. Flat slab tops to be reinforced concrete, designed for HS-20 traffic loading in accordance with ASTM C890, with eccentric manhole opening.
- C. Base Sections: 4, 5 or 6 feet in diameter as required by the Drawings; monolithically cast wall and bottom slab for all new sewers. There are to be no lift holes that go through structures.
- D. Steps: Polypropylene plastic reinforced by a 1/2 inch diameter steel rod, meeting requirements of ASTM C478 and installed by the manufacturer.

b) 2.2 Frames and Covers

- A. Standard: Solid lid with "SANITARY SEWER" lettering and concealed pick holes. Manhole ring and cover to be Model R-1776 by Neenah Foundry Co., Neenah, Wis.; USF 362CK by U.S. Foundry & Mfg. Corp.; V-1480-1 by Vulcan Foundry, Inc., or approved equal. Regardless of frame and cover type used above or approved equal, they must come from the manufacturer with 4-5/16" anchor holes in the frame on a 24 1/2" diameter bolt pattern.
- B. Vented: Identical to those provided for standard frames and covers except that they shall have six, equally spaced, drilled holes 1/2 inch in diameter.
- C. Waterproof: Solid lid with stainless steel bolts, gasketed with specified lettering on the lid and equal to USF 362 CK-BWT by U.S. Foundry & Mfg. Corp.; Model R-1915-E2, Type P with bolted cover, by Neenah Foundry Company; or V2480-1 by Vulcan Foundry, Inc.
- D. Flat Slab Tops and Manholes in Unpaved Areas: Shall have the frame precast in the top slab.
- E. All manhole frames and covers for the project shall be furnished by a single manufacturer.

c) 2.3 Joints

- A. Riser Section Internal Seals: Butyl rubber rope equal to Ram-Nek, ConSeal CS-30R, or Kent-Seal No. 2 joint sealer.
- B. Riser Section External Seals: Flat butyl rubber sheet not less than 1/16" thick and 6" wide applied to the outside perimeter of the joint after application of a primer. The butyl shall be Polywrap by RuVan Inc. or equal approved by Engineer.
- C. Pipe-to-Manhole Connectors: Kor-N-Seal as manufactured by NPC Systems, Inc., or equal approved by the Engineer.

d) 2.4 Grout

Embeco 167 Mortar, or equal approved by the Engineer.

C. Part 3 – Execution

a) 3.1 General:

- A. Construct and set all manholes in accordance with the details shown on the Drawings and in accordance with special notes provided for particular manholes. Manholes must be installed at all grade changes, pipe line size changes, turns, etc., and may be spaced 300 foot to 400 foot apart.
- B. Provide standard frames and covers unless otherwise noted on the Drawings.
- C. Where no special instructions are provided on the Drawings or in the field by the Engineer, set the top of manholes as follows:
 - (1) Outside of roads or streets, set top level at grade of surrounding landscape. Tolerance shall be + or – 0.2' maximum.
 - (2) In roads, streets, road shoulders, sidewalks, and lawns set the tops flush with the proposed finished surface. On sloped surfaces, angle the tops of manholes as necessary to conform to slope or gradient of the proposed finished surface or pavement. Tolerance shall be + or – 0.05' maximum.

b) 3.2 Preparation:

- A. Excavate strictly in accordance with a applicable OSHA regulations and requirements and maintain a safe work area at all times.
- B. Dewater excavation so that manholes will be installed in dry holes. Do not install manholes in water or on fluid soil.
- C. Prepare an unyielding foundation of crushed stone, 6 inch minimum thickness, as shown on the Drawings.

c) 3.3 Installation:

- A. Set the bottom as near practical to the required grade to ensure that a properly grouted channel can be provided. Manholes must be vertical. Do not extend main line sewer into manhole more than 2" beyond inside wall.
- B. Whenever the difference in elevation between the inlet and outlet sewer inverts exceeds 24 inches provide an outside drop connection in accordance with the detail shown on the Drawings.
- C. Carefully assemble manhole sections and sewer entrance using gasketed joints installed in accordance with the manufacturer's recommendations to ensure a tight and permanent fit. **Grout will not be permitted in horizontal manhole joints.**
- D. Grout all lift holes from outside the structures. No structure will be accepted with lift holes that fully penetrate the structure walls.
- E. Steps within manholes are not allowed.

- F. Construct invert channels as shown on the Drawings with 1:2 (cement: sand) mortar to provide smooth channel through pipe inlets to true line and grade as shown on the Drawings. Concrete blocks or bricks may be used for fill in deep base sections under mortar; mortar depth over blocks or bricks must be three-inch (3") minimum.
- G. Provide brick leveling courses as required at top of conical section. Plaster inside and out with mortar equal to that used for sewer entrances. Maximum height of leveling course shall be 6 inches.
- H. Align any eccentric manhole openings longitudinally over the main sewer, unless otherwise directed by the Engineer.
- I. Anchor frame to manhole cone using stainless steel anchor bolts, unless frames are cast into cones.

d) 3.4 Coating

(Only if coating is designated on the Drawings or otherwise specified.) Field coat exterior of manhole (including leveling courses and base of frame) with coal tar bitumastic coating in accordance with coating manufacturer's directions. If coating is brushed (rather than sprayed) take care to thoroughly coat all surface irregularities and joints. Allow time for coating to dry completely before leakage testing and back-filling. **DO NOT APPLY COATING TO "GREEN", UNCURED CONCRETE.**

e) 3.5 Backfilling:

- A. Use crushed stone for backfilling around any manhole in streets, paved areas, or areas to be paved.
- B. Backfill using clean native soil containing no rock or debris for manholes located outside of paved areas.
- C. It is the Contractor's option to vacuum test manholes with permanent backfill in place around the structures. However, if a manhole fails the test, it must be dug out and repaired from the outside.

f) 3.6 Inspection and Tests:

- A. Conduct a vacuum leakage test on each complete sanitary sewer manhole. Place a vacuum of 10" Hg on the manhole as measured by an approved vacuum gauge. Maximum allowable vacuum loss shall be 1 inch of Hg in 60 seconds for 4 ft. diameter manhole, 75 seconds for 5 ft. diameter manhole, or 90 seconds for 6 ft. diameter manhole. **Conduct test with frame and cover in place.**
- B. Repair or reconstruct any sanitary sewer manhole that fails the leakage test and re-test until satisfactory results are obtained.

END OF SECTION

104. Erosion Control

A. Part 1 – General

All work must comply with the approved Erosion, Sediment and Pollution Control (ES&PC) Plan. Any construction that will disturb a land area of one acre, or more, must be covered under the appropriate NPDES General Permit for Construction Activity. The execution of the approved ES&PC Plan must comply with the "Manual for Erosion and Sediment Control in Georgia", current edition, prepared by the Georgia Soil and Water Conservation Commission (commonly known as the *Green Book*). In case of conflict between these specifications and the Green Book, the Green Book shall govern.

a) 1.1 Section Includes:

- A. Providing adequate protection against erosion and sediment transport off the property during the execution of the Work, including but not be limited to those features specifically shown on the Drawings and/or approved Erosion and Sediment Control Plan.
- B. The requirements specified in SECTION 101, GENERAL POLICIES, apply to this Section.

b) 1.2 Reference Standards:

- A. "Manual for Erosion and Sediment Control in Georgia', Fourth Edition, revised 1996, prepared by the Georgia Soil and Water Conservation Commission.
- B. "Standard Specifications, Construction of Roads and Bridges", Georgia Department of Transportation, 1993 Edition, sections of which are referenced herein.

c) 1.3 Site Conditions:

- A. Protect all adjacent public and private property from siltation and other damage due to construction activities.
- B. Confirm that applicable Land Disturbing Permit has been obtained. Comply with approved Erosion and Sediment Control Plan (if applicable) and all local and state regulations relating to erosion and sediment control.
- C. Maintain all temporary controls until permanent grassing or landscaping has been complete.
- D. Provide supplementary erosion and run-off control measures whenever it becomes apparent that additional problems exist.

B. Part 2 - Products

a) 2.1 Hay or Straw Bales

Are not acceptable except as approved by the City of Calhoun Utilities Engineer.

b) 2.2 Silt Fence

Sediment barriers must be Sd1-NS or Sd1-S. As of January 1 2016, in the existing Georgia Department of Transportation Qualified Products list #36 (QPL- 36), Type A, B, or C will fall under sensitive and non-sensitive applications. **Type C will be classified as sensitive and Type A and B as non-sensitive.**

c) 2.3 Stakes

1.5" x 1.51 x 481 hardwood, or 211 x 411 x 481 soft wood, or 1.3 lb/ft. steel posts. Maximum 6 ft. spacing.

d) 2.4 Seed

Select plants appropriate to the season and site conditions from Appendix A of "On-site Erosion Control." Temporary grass shall be a quick growing species such as millet, rye grass, Italian rye grass, or cereal grasses suitable to the area providing a temporary cover which will not later compete with grasses sown for permanent cover. Seed shall meet the requirements of the Georgia Seed Law and Rules and Regulations.

e) 2.5 Lime

Agricultural grade ground or pulverized limestone.

f) 2.6 Fertilizer

Standard commercial grade, either 4-12-12, 6-12-12, or 5-10-15.

g) 2.6 Corrugated Metal Pipe

16 gauge, type I or II culvert pipe conforming to AASHTO M36.

h) 2.8 Stone for Construction Exit/Entrance Pad

National Stone Association R-2 (1-1/2 inch to 3-1/2 inch stone), or Georgia D.O.T. Section 800, Size No. 3 (1 inch to 2 1/2 inch).

i) 2.9 Riprap

Conforming to Georgia Department of Transportation Standard Specification Section 805.01, Stone Dumped Riprap, Type 3 (or Type 1 if noted on Drawings).

C. Part 3 - Execution

a) 3.1 Inspection

Prior to clearing the site, inspect site and determine all preliminary erosion control measures that will be required to prevent erosion and sedimentation problems and comply with any applicable Erosion Control Plans approved by local and/or state authorities.

b) 3.2 Preparation

Provide all necessary materials at the site prior to clearing and/or grading.

c) 3.3 Installation:

A. Where applicable, provide temporary stone exit/entrance pad located at points of vehicular ingress and egress to the site and maintain in service until pavement is placed. Minimum pad thickness shall be 6 inches; minimum width shall be 20 feet; minimum length shall be 50 feet. Maintain in a condition that will prevent tracking or flow of mud onto public roads.

- B. Provide erosion and sediment control barriers as shown on the Drawings, required by the approved Erosion Control Plan, or as needed for the proposed construction methods and procedures to detain sediment on site.
- C. If impoundments or sediment traps are required, construct immediately after necessary clearing.
- D. When permanent site drainage facilities are included in the Work, install as early as practical in the construction process. Where practical without creating erosion problems, divert run-off into permanent facilities.
- E. Provide temporary sediment barriers around drainage structures and all grading areas and excavations where sub grades are being prepared.
- F. Provide diversion berms or dikes at top of all slopes and abrupt changes in slope. Diversion dikes or berms to be minimum 2 feet in width and 18 inches in height. Machine compact and provide temporary seeding immediately after construction.
- G. Provide temporary drains where necessary to convey water down slopes. Drains may consist of pipes, filter cloth, rubble, concrete, asphalt, or plastic sheets. Inspect for damage after each rainfall event. Repair as required.
- H. Provide riprap or other protection at all drainage discharge points to prevent scour at these points. Provide 4 inch filter material under riprap.
- I. As soon as practical following grading of areas to be paved, apply an initial base course of stone of at least 4 inch thickness and maintain by periodic top dressing until final base course and pavement are installed.
- J. Provide temporary seeding immediately on all disturbed areas which will not receive final grading or landscaping within 30 days.
- K. Where no specific controls are called for on the Drawings for drainage leaving the site, provide check dams to create ponding for sediment deposition and collection of debris. Maximum height shall be 4 feet and the impounded area shall be kept clean as much as practical.

d) 3.4 Maintenance

Inspect for damage after each rainfall event. Clear all debris and accumulated sediment from behind barriers, check dams, etc. so that the functional capacity of these items is not significantly reduced throughout the construction period.

e) 3.5 Clean-Up

Following completion of permanent site drainage and landscaping, remove all temporary erosion control facilities and dispose of all accumulated waste in a manner approved by the Engineer. Landscape any resulting disturbed areas to conform to and blend with the remainder of the site landscaping.

END OF SECTION

105. Trenching, Backfilling and Compaction

A. Part 1 – General

a) 1.1 Section includes:

- A. Trenching, excavation of all materials encountered including rock and unsuitable materials; disposal of excess materials; sheeting and shoring; pumping and dewatering; bedding; backfilling; and compaction for installation of pipe, piped utilities, underground conduits, and appurtenances thereto, which are 5 feet outside building lines.

b) 1.2 Quality Assurance:

- A. Contractor shall schedule required quality control testing, cooperate with all testing personnel, and provide equipment and labor required for all sampling, preparation of samples, field testing, and transport of samples to the testing laboratory.
- B. Two signed copies of all field and laboratory testing reports shall be sent to the Owner and Engineer immediately upon completion.

c) 1.3 Reference Standards:

- A. ASTM D 422-63 (R 1990) Test Method for Particle-Size Analysis of Soils.
- B. ASTM D 1556-90, Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
- C. ASTM D 698-91, Test Method for Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 5.5 lb. (2.49 kg) Rammer and 12 inch (305-mm) Drop (Standard Proctor).
- D. ASTM D 2167-84, (R1990) Test Method for Density and Unit Weight of Soil in Place by the Rubber -Balloon Method.
- E. ASTM D 2487-90, Test Method Classification of Soils for Engineering Purposes.
- F. ASTM D 4318-84, Test Method for Liquid Limit, Plastic Limit, and Plasticity of Soils.
- G. NEPA 495, Code for the Manufacture, Transportation, Storage and Use of Explosive.

d) 1.4 Site Conditions:

- A. All work under this Section shall conform fully to applicable OSHA rules and regulations.
- B. Maintain access to the existing facilities and private property at all times.
- C. Perform operations with special care in the vicinity of existing facilities. Protect above or below-ground utilities which are to remain. If any damage is done to these facilities, repair immediately.

- D. Conduct all work required on public right-of-way in strict conformance with rules and regulations of governing bodies having jurisdiction over the work.
- E. Provide traffic protection by means of suitable signs, barricades and lights.
- F. Protect existing underground and overhead utility pipes, poles, lines, services, structures, etc. from damage or interruption of service by the conduct of construction operations. Furnish and have available at all times an electronic pipe detector in working order, and use to survey the proposed path of trenching prior to excavation. Location and protection of all underground and overhead utilities and structures in the construction area is the responsibility of the Contractor.

B. Part 2 - Products:

- a) 2.1 Bedding and Backfill Approval
All bedding and backfill material shall be subject to approval of the Engineer. For approval of imported backfill or bedding material, give at least five (5) working day's advance notice of intent to import material and designate the proposed borrow area. Allow the owner's testing laboratory to sample as necessary from the borrow area for the purpose of making acceptance tests to prove the quality of the material.
- b) 2.2 Native Material Suitable for Backfill
Excavated on site soils which do not contain "Unsuitable Material" as defined herein. Excessively wet or dry soils may not be used until moisture is adjusted to optimum level to permit proper compaction.
- c) 2.3 Granular Material for Bedding
A granular soil, sand, chert, crushed stone, or mixture of these, all of which meets the requirements of ASTM C33 for coarse aggregate, Grading Size No. 57, free of organic matter, debris, and unsuitable material.
- d) 2.4 Stone for Stabilization or Backfill
Sound, durable gravel or "crusher run" rock, all of which passes a 1 1/2 inch sieve, free of organic matter, debris, and unsuitable material.
- e) 2.5 Unsuitable Material
Any Class IVAR IVB, or V soil per ASTM D 2321, topsoil, roots, vegetable matter, trash, debris, asphalt, frozen or excessively wet soil, or stone or gravel larger than 2-1/2 inch in maximum dimension.
- f) 2.6 Rock Definition for Trenching
Any material which cannot be excavated with a backhoe having a bucket curling force rated at not less than 33,010 pounds (Caterpillar 225B or equivalent).

C. Part 3 - Execution

- a) 3.1 Preparation:
 - A. Perform demolition, clearing and grubbing as required.

- B. Install erosion and sediment control measures as required.
- C. Strip and stockpile all sod and topsoil suitable for reuse in restoration.
- D. Remove pavement only as necessary for excavating the trench and installing the pipeline and appurtenances. Cut all asphalt pavement in straight, uniform lines by means of a jack hammer or suitable pavement cutter. Cut all concrete pavements to a depth of at least 2 inches along the cut line with a rotary saw, after which the pavement may be broken with a jack hammer or suitable pavement cutter.
- E. Provide protection of utilities as follows:
 - (1) Contact all local utility owners, and with an electronic pipe locator and their assistance, locate underground structures, pipes and utility lines, and mark them in advance of trenching operations. Excavate and expose underground utilities in test pits to verify locations and depths. As excavation approaches the marked areas, digging by conventional trenching machines shall be done with extreme care.
 - (2) Promptly correct damage to utilities or structures, to promptly restore service, and provide a condition at least equal to the original condition before the damage occurred. Should the Contractor fail to promptly restore service or correct the damage, the City may correct the damage and back-charge the Contractor for costs incurred for the corrective work.
 - (3) Perform removal, relocation, or relaying of pipes, utility lines, and appurtenances which will obstruct the completed pipelines as part of the trenching work.
 - (4) Where existing storm drains are damaged or destroyed by removal to facilitate construction, replace the drains with new reinforced concrete pipe meeting the requirements of ASTM Designation C-76, Class II. Pipe size shall be equal to that removed except sizes smaller than 12 inches which shall be replaced with 12 inch pipe. Existing storm drains which are damaged shall be replaced at the contractor's own expense.

b) 3.2 Trench Excavation:

- A. Excavate all subsurface material within the trenching limits specified regardless of the material encountered, including rock. Excavated materials satisfying the requirements of this Section for Native Material may be used for backfill.
- B. Excavate the banks of trenches vertical from bottom of trench to 1 foot above the top of the pipe or conduit.
- C. Keep the trench width within the limits specified below, However OSHA safety requirements shall supersede the requirements stated herein whenever applicable:
 - (1) Maximum Width at top of pipe = Pipe outside diameter (O.D.) plus 24 inches. If the maximum trench width is exceeded, the required bedding must be upgraded

to the next higher class at contractor's expense, for that part of trench that exceeds the maximum allowable width.

(2) Minimum width of trench = O.D. of bell or coupling plus 15 inches. (This minimum applies to all trenches including those in rock excavation.)

- D. Place excavated material (spoil) sufficiently back from the edge of trench to prevent caving of the trench wall and to permit safe access along the trench. Provide at least 3 ft. clear from toe of spoil bank on at least one side of trench for access.
- E. Unless prior approval is obtained from the City, limit the length of open trench to that which can be completed in one working day. Do not leave trenches open overnight unless there are extenuating circumstances and unless the open trench is fully protected by safe and effective barricades and lights.
- F. Where necessary, and as required by OSHA regulations, provide and install sufficient and suitably sized movable shields, sheeting, shoring and bracing which shall remain in place until the backfill has proceeded to a point where it can be removed safely. When damage is liable to result from withdrawing sheeting, it shall remain in place. Movable shields, sheeting, shoring, bracing, etc. are considered as an integral part of the excavation work and no extra payment will be allowed for this work.
- G. Remove rock encountered in trench excavation for the overall width of the trench and to a depth of 6 inches below the invert of the pipe.
- H. Apply for and obtain all required permits for handling explosives and performing blasting. Conduct blasting operations in strict accordance with all existing ordinances and regulations and only with the prior approval of the City. Carefully protect all exposed structures from the effects of blast and cover all blasts with heavy timbers, mats or other suitable protection. Blasting shall be done only by experienced workers. Use very light charges to prevent damage to adjacent structures. Promptly repair any damage. Store all blasting supplies in accordance with local ordinances. In no case shall caps or other explosives be kept at the place where dynamite or other explosives are stored.

c) 3.3 Bedding:

- A. Bedding shall conform to the individual requirements for the pipe or conduit material being used. Unless otherwise specified or shown on the Drawings, bedding shall be Class B "Modified" for PVC sanitary sewer pipe and Class C for ductile iron sewer pipe and RCP/CMP culverts.
- B. Grade the trench bottom firm, uniform and continuous to allow bearing all along the entire length of the barrel of the pipe. Excavate bell holes so that the pipe bells or couplings do not support any load. When excavation is carried below or beyond that required, fill the over excavated space with suitable, compacted Granular Material.
- C. In areas of rock excavation, and where needed in other areas, provide Crushed Stone cushion across the full width of the excavation to a minimum 6 inch depth under the pipe.

- D. Whenever the subgrade is unstable or too soft to provide a satisfactory foundation for any pipe, dewater and undercut the trench as necessary and stabilize with crushed Stone. Compact and bring the trench bottom to proper grade to create a firm, unyielding stabilized subgrade for bedding material and/or pipe.
- d) 3.4 Backfill:
- A. Backfill and compact all trenches and excavations immediately after the pipe or appurtenance has been installed. Unless otherwise specified or shown on the Drawings, use suitable excavated Native Material for pipe trench backfill. If sufficient suitable Native Material is not available on site, furnish sufficient and suitable borrow material for backfill.
- B. Initial Backfill - Place select backfill beginning 6 inches above the pipe to a depth not to exceed 12 inches loose. Use no stone larger than 3/4 inches maximum dimension in the initial backfill. Compact firmly and evenly, utilizing an approved method. Compaction shall meet the requirements for the specific location and application as listed below.
- C. Remaining Backfill - Place backfill in the remainder of the trench from top of Initial Backfill, as follows:
- (1) **Trenches in areas to be paved, in ditch lines or other areas subject to erosion, and in areas beneath proposed structures:** Backfill trench line with crusher run or Stone suitable for backfill. Trench line shall be defined as outlined under Section 3.2, C, (1) and (2). Place to achieve 6 inch compacted to 95% Standard Proctor Density. Use mechanical power tampers to achieve required compaction. Rock no larger than 6 inches in maximum dimension may be placed in the upper layer of backfill unless otherwise approved by the Engineer. In areas to be paved, also installed and compact pavement base material to the thickness specified. Install a temporary surface at grade consisting of 2 inches of crushed stone. Leave backfilled trench open to traffic and maintain the surface at grade by refilling with stone and re-compacting as necessary to remedy any settlement. Continue such maintenance, including dust control, until paving is authorized by the City Street Superintendent or appropriate county official.
 - (2) **Trenches in areas to be grassed or landscaped:** Unless otherwise specified, backfill with Native Material and compact in layers by methods of Contractor's choice to achieve minimum 85% Standard Proctor Density. If the trench is on DOT or Railroad right-of-way, compact to density specified in the applicable permit. Refill and re-compact as often as necessary to maintain the trench surface at the required finished grade.
 - (3) **Excavated areas outside of trench lines as defined under Section 3.2, C, (1) and (2):** Backfill material and compaction shall be as specified by governing bodies or any existing ordinances for city streets or county roads respectively.

- e) 3.5 Field Quality Control:
 - A. Perform routine quality control compaction testing at a frequency sufficient to ensure adequate compaction throughout the trenching.
 - B. **In areas to be paved, perform compaction testing prior to placing base material.**
 - C. Notify the testing laboratory and the City of Calhoun Engineering Department 24 hours prior to need for testing. When any tests indicate the density or moisture content does not meet requirements specified herein, as determined by the Engineer, rework until the required density has been obtained.

END OF SECTION

106. Sanitary Sewerage Lift Stations

A. Part 1 General

a) 1.1 Section Includes:

- A. Furnishing and installing a submersible sanitary sewerage pump system within a concrete wetwell and valve pit with all equipment, stand-by power and controls in accordance with the requirements as listed within these specifications.
- B. The design criteria for the lift station shall require minimum run cycles based on wet well storage volume. The volume between “lead pump on” elevation and “pumps off” elevation shall equal or exceed the volume one pump can discharge in 2.5 minutes with no flow entering the wet well.
- C. The requirements specified under Sections 103, 105, 106, 107, and 108 (excepting Section 103, part 3.16 - DISINFECTION) apply to this section.

b) 1.2 Reference Standards:

- A. Hydraulic Institute Standards, 14th Edition.

c) 1.3 Submittals:

- A. Prior to fabrication submit for City Utilities Engineer’s approval:
 - 1. Dimensioned drawings of pump mounting plates, pump spacing in wetwell, wetwell detail with elevations for Mercury Float Switches (high level, lag, lead and low level), influent pipe elevations and access hatch location and dimensions.
 - 2. Manufacturer’s certified shop drawings and catalog information showing the performance curves for the pump including flow, head, efficiency, and brake horsepower over the full operating range of the pump.
 - 3. Manufacturer’s recommended list of spare parts and part numbers.
 - 4. Details of manufacturer’s warranty, 5 year minimum.
- B. After City Engineer’s approval of submittals and contractor’s installation but prior to start-up supply 4 copies of operation and maintenance data.
- C. After start-up submit certified test results and reports of the field start-up testing specified herein.

B. Part 2 Products

2.1 General:

- A. The lift station shall include a minimum of two (2) submersible non-clog pumps, pump guide rails, stainless steel guide rail mounting plates with discharge elbow and rail supports, access frame and covers, guide rail supports, stainless steel lifting chains or stainless steel lifting cables, stainless steel clevises, power and control cables, electrical panel, stand-by generator, float switches, precast wetwell, valve pit, discharge piping and valves and other items for a complete and properly operating lift station.

- B. The electrical supply and equipment for sanitary sewer lift stations shall be 480 volts, three phase, unless otherwise approved in writing by the City Utilities Engineer.

2.2 Submersible Pumps and Associated Equipment

- A. Acceptable Manufacturers: The pump vendor shall furnish submersible pumps as manufactured by Flygt Pump Company, Yeomans, Homa Pump Technology or approved equal. Pumps shall be as shown on the drawings and in accordance with the following:
- B. Discharge Connection: A sliding bracket shall be an integral part of the pump unit. The volute casing shall have a machined discharge flange to automatically and firmly connect with the cast iron discharge connection, which when bolted to the floor of the sump and discharge line, will receive the pump discharge connecting flange without the need of adjustment, fasteners, clamps or similar devices. Installation of the pump unit to the discharge connection shall be the result of a simple linear downward motion of the pump unit guided by no less than two (2) guide bars.
Cable guides will not be accepted.
- C. Guide Bars: Lower guide bar holders shall be integral with the discharge connection. Two (2) guide bars shall be installed for each pump, to permit raising and lowering the pump. Guide bars shall be of two inch (2") 304 stainless steel, three inch (3") 304 stainless steel, or single stainless steel T-bar type structural shape of sufficient length to extend from the lower guide holders on the pump discharge connection to the upper guide holders, as shown on the Drawings. **All guide bars shall be furnished by the pump supplier.**
- D. Motor: The pump motor shall be housed in an air-filled watertight casing and shall have moisture resistant Class F 155 degree C insulation, NEMA Design B and designed for continuous duty or shall be a U.L. listed submersible motor designed for Class 1, Group D, Division 1 hazardous locations. Furnish not less than two thermal sensors embedded in the stator windings to automatically de-energize the motor if the winding temperature exceeds 150 degrees C, or a lower temperature if recommended by the manufacturer. Use sensors that automatically reset after temperature decreases and allow pump to restart automatically. Provide thermal sensors in addition to the external motor over-current protection. Extend sensor electrical conductors to the instrument control panel for connection in pump control circuit. The pump motors shall operate at a maximum allowable speed of 1800 RPM (unless otherwise approved by the City Utilities Engineer) and shall be non-overloading throughout the entire range of the pump curve.
- E. Motor Cable: The pump motor cable shall be suitable for submersible pump applications. Cable sizing shall conform to NEC Specifications for pump motors and shall be of adequate size to allow motor conversion without replacing the cable. The cable entry water seal design shall be such that precludes specific torque requirements to insure a watertight and submersible seal. The cable entry junction box and motor shall be separated by a stator lead sealing gland or terminal board which shall isolate the motor interior from foreign materials gaining access through the pump top.
- F. Cooling System: Each unit shall be provided with an adequately designed cooling system. Thermal radiators integral to the stator housing cast in one unit are acceptable. Where water jackets alone or in conjunction with radiators are used, separate circulation shall be provided. Cooling media channels and ports shall be non-clinging by virtue of their dimensions. Provision for external cooling and flushing shall be provided.

- G. Pump Design: The pumps shall be capable of handling raw, unscreened sewage and must be capable of passing a solid 3” sphere. The design shall be such that the pump unit will be automatically and firmly connected to discharge piping when lowered into place on its mating discharge connection, permanently installed in the wet well. The pump shall be easily removable for inspection or service, requiring no bolts, nuts, or other fastenings to be disconnected. For this purpose, they shall be fitted with a stainless steel chain of adequate strength and length to permit raising and lowering the pump for inspection or removal. A safety chain clevis shall be provided for attachment of the chain to the access door frame. The pump, with its appurtenances and cable, shall be capable of continuous submergence under water without loss of watertight integrity to a depth of 65 feet. All major parts, such as the stator casing, oil casing, sliding bracket, volute and impeller shall be of gray iron. Provide an accessible tap and plug at oil chamber for draining and inspecting oil.
- H. Impeller: The impeller shall be gray cast iron of non-clogging design capable of handling solids, fibrous material, heavy sludge and matter found in normal sewage applications. The impeller shall be constructed with a long throughlet without acute turns. The impeller shall be dynamically balanced. Static and dynamic balancing operation shall not deform or weaken it. The impeller shall be a slip fit to the shaft and key driven. Non-corroding fasteners shall be used.
- I. Seals: Each pump shall be provided with a mechanical rotating shaft seal system running in an oil reservoir having a separate, constantly hydro-dynamically lubricated lapped seal faces. The upper seal unit between the pump and oil chamber shall contain one (1) stationary tungsten-carbide seal ring or chrome steel on and one (1) positively driven rotating carbon or ceramic ring. Bottom seal shall be one (1) stationary silicon-carbide seal ring and one (1) rotating silicon-carbide seal ring. Each interface shall be held in contact by its own spring system supplemented by external liquid pressures. The seal shall require neither maintenance nor adjustment, but shall be easily inspected and replaceable. No seal damage shall result from operating the pumping unit out of its liquid environment. The seal system shall not rely upon pumped media for lubrication.

2.3 Lift Station Control Panel and Miscellaneous Equipment:

- A. Lift Station Control Panel: The pump vendor shall furnish an automatic control center equipped for the voltage and service required complete with circuit breaker combination, across-the-line magnetic starters, 3 phase, overload protection, electrical alternator, automatic transfer to non-operating pump in event of overload in the operating pump, overload switch, run indication lights, elapsed time meters, 24 volt control circuit transformer, and a ground fault interrupter type convenience outlet with main power disconnect breaker and 125 volt outlet with 20 amp breaker. Provide a sensor electrode, panel indicator light, and conductors to the control or instrument panel to energize an indicator light upon detection of water in the oil chamber. All components shall be housed in a corrosion resistant 316 stainless steel NEMA 4X enclosure. Within the enclosure, furnish a continuously hinged, steel or aluminum panel with white enamel finish near the enclosure door for locating panel mounted operating controls. Furnish three position selector switch to override automatic feature and permit manual selection of either unit as lead pump. Furnish surge protection arrestors and capacitors on the line side of the control center circuit protectors. Furnish power monitor to prevent pump operation when phase loss, single phasing, under-voltage or phase reversal occurs. Furnish thermostatically controlled space heater of approximately 100 watts to prevent moisture from condensation. Furnish blue lens push-to-test indicator light for each pump to energize when associated pump motor annunciates thermal overload trip. Furnish Hand-Off-Auto selector switch for each pump. Furnish red alarm light with protective cover, located at top of control panel. Provide reset push-button for alarm light to be located on the interior of the control panel.

B. Provide the following additional contacts to the terminal block for integrating the Mission Control SCADA:

- (1). A Normally Closed (NC) contact held open by power on
- (2). A Normally Closed (NC) Low Level Float held open by water at normal levels
- (3). A Normally Open (NO) contact that closes when pump # 1 runs
- (4). A Normally Open (NO) contact that closes when pump # 2 runs
- (5). A Normally Open (NO) High Level Float that closes when water rises above the normal level

C. Provide a main disconnect on the control panel side of the meter base, equipped with properly sized breaker, meeting National Electrical Code requirements and inside a weather resistant 3R housing.

D. In the event that dual power feed is not available, submittals for an on-site stand-by generator with an automatic transfer switch must be submitted for approval. Generators are to be mounted on 12" thick concrete slabs (the bottom 6" of the slab is to be below grade). City standard specifications for generator sets are available upon request.

E. Mount the pump control panel, automatic transfer switch and main disconnect on a tubular stainless steel (Type 304) frame set in a 6" thick concrete slab.

F. All conduits from junction box to wet well shall be sealed at both ends to prevent sewer gases from seeping into boxes. Seal the conduits between the junction box and control panel with Appleton Kwiko "A" Sealing Cement and Filler, or approved equal.

G. Miscellaneous Equipment: The pump vendor shall furnish Four (4) sealed float type Mercury level switches (top weighted), each provided with an adequate length of electric cable, with a stainless steel cable holder for installation inside the wet well.

H. Starting/Stopping Level: The starting level and stopping level for each pump shall be independently adjustable.

I. Lift Station Site Electrical Junction Box: A minimum 24"x24"x8" stainless steel NEMA 4X junction box shall be mounted near the wet well. The door of this junction box shall open in a direction away from any access hatches in the wet well, and the door shall be pad lockable. All wires entering the wet well (pump power and control wires, float wires, etc.) shall be connected to terminal strips inside this junction box with corresponding wires extending to the main control panel. Terminals shall be labeled as "Pump 1," "Pump 2," etc.

2.4 Access Door and Frame: Shall be Halliday Series S2R or approved equal, and shall be 48"x 48" (minimum).

2.5 Portable Hoist: Shall not be required.

2.6 Precast Concrete Wetwell and Valve Pit:

A. Dimensions, wall penetrations and elevations shall be shown on the drawings.

- B. Constructed and installed in accordance with Sections 3 and 4.
- C. See standard details herein for minimum dimensions and special notes.
- D. Submit Shop Drawings for precast sections and frames and covers before placing orders to suppliers for the job. Wetwells from Tindall Corp. will not be accepted.
- E. Precast Reinforced Concrete Sections for round wetwells shall meet ASTM C478. Square or rectangular precast wetwell structures shall meet ASTM C913.

2.7 Piping and Valves:

- A. Piping shall be Ductile Iron designed in accordance with ANSI/AWWA C-150/A21.50 and Manufactured in accordance with ANSI/AWWA C151/A21.51.
- B. Piping joints shall be "Flanged" true and perpendicular to the axis of the pipe. Flanges shall be cleaned of all burrs, deformations, or other imperfections before joining.
- C. Connections to equipment shall be made in a manner which will not induce strain or stress on the equipment or valve flanges.
- D. Check valves shall be swing type, iron body conforming to Mueller Figure A2600-6-01, Clow F-5345, or equal.
- E. Plug valves shall be Pratt Ballcentric Plug Valve or equal.
- F. Air-Vacuum Valves shall be Crispin SL 20 or equal, minimum two-inch (2") in size.

2.8 Lift Station Site:

- A. The lift station site shall be a minimum of 50 feet by 50 feet in dimension and shall be graded almost level except for a gentle slope away from the wetwell to promote positive drainage off the site.
- B. An access road (minimum of 14 feet wide) shall be provided to each site.
- C. The site and access road shall be covered with 6" of Graded Aggregate Base (meeting the requirements of GDOT Standard Specification of Roads and Bridges, Section 815) compacted to a minimum density of 95% Standard Proctor Density.
- D. The site layout plan of equipment and structures shall allow for truck access to both sides of the wetwell and generator. The control panel should be located near the wetwell, but with adequate clearance to allow generous standing room in front of the panel and to allow doors and hatches to operate without conflict.

2.9 Fencing:

- A. The lift station site shall be fenced with 72" high chain link fence with 3 strands of barbed wire.
- B. Chain link fabric shall be No. 9 gauge wire conforming to ASTM a 392-92, Class 1 coating galvanized after weaving by hot-dipped process with not less than 1.2 oz. of zinc per sq. ft. when tested per ASTM A90, 2" mess size, knuckled at one selvage and twisted and barbed at the other selvage.
- C. Double 6' sing gates shall be provided for access, with heavy-duty galvanized steel, non-lift-off hinges. Swing gates shall conform to ASTM F 900.
- D. Fence post, gate post and line post shall be heavy-duty external and internal zinc coated conforming to ASTM F 1083-91. Gate post and corner post shall be a minimum of 2.5" O.D. and line post shall be a minimum of 1.9" O.D.
- E. All accessories clips, bolts, wire ties etc. shall be galvanized.

2.10 Sanitary Forcemains:

- A. Sanitary forcemains shall conform to all requirements under Section 1, Part 1, 2.2, 2.3, 2.10, 2.11 & 2.12, Part 3, 3.1(except F), 3.2., 3.3, 3.4(except C), 3.5, 3.6, 3.7, 3.8, 3.11, 3.13(except D, E, F, G, H & I) and 3.15 (except F, which shall read as Locate, remove, and replace all defective pipe, valves and fittings. Clamps or other repair devices shall not be used).
- B. All PVC force main pipes shall be solid green in color.
- C. Force mains shall be installed with 48 inches of cover measured from finished grade to top of pipe barrel, unless otherwise shown on drawings.
- D. Force mains shall terminate in the receiving manhole at no more than 1 foot above flow line.
- E. Section 3, Part 3.7, Water Main Separation applies to forcemains.

2.11 Testing: After installation and testing, the pump vendor shall furnish the services of a competent factory representative of the pump manufacturer for the purpose of inspecting the installation and initial operation of the station. The equipment will be inspected for defects or weakness, or both and if found, the equipment shall at once be removed and be replaced with new parts or be made good in a satisfactory manner, at no additional expense to the City of Calhoun.

- A. Continuous 24-hour test shall be made after all defects have been remedied, at no additional expense to the City of Calhoun.
- B. After installation and testing, the pump vendor shall make written certification to the City of Calhoun that the equipment and controls have been properly installed in accord with the Drawings and Specifications, and that operation and maintenance instructions have been furnished to the City of Calhoun.

2.12 Guarantee: The pump vendor shall guarantee the equipment to be free from defects in workmanship, design, and material for a period of one (5) years after initial operation begins. The pump vendor shall supply replacements at no additional expense to the City of Calhoun, for every defective part, and every part showing undue wear during the guarantee period.

END OF SECTION

107. Contact Information

Larry Vickery, Utilities General Manager: Office 700 West Line Street
Phone: (706) 629-4701
Direct line (706) 602-6026
Fax (706) 629-1611
e-mail lvickery@calnet-ga.net

Kyle W. Ellis, Water & Sewer Director: Office 700 West Line Street
Phone (706) 629-4701
Direct line (706) 602-6078
Fax (706) 602-6079
e-mail jcrawford@calnet-ga.net

David Burnett, Engineering Dept. Manager: Office 700 West Line Street
Phone (706) 602-6089
Fax (706) 629-1611
e-mail dburnett@calnet-ga.net

Mark Williamson, Water & Sewer Const. Supt: Office 260 Kirby Road
Phone (706) 629-4750
Direct line (706) 602-6080
Fax (706) 602-6077
e-mail mwilliamson@calnet-ga.net

Engineering Inspection Department:

Kevin King, Engineering Technician: Office 700 West Line St.
Phone (706) 602-6111
e-mail kking@calnet-ga.net

Tod Lankford, Engineering Technician: Office 700 West Line St.
Phone (706) 602-6081
e-mail tlankford@calnet-ga.net

108. Appendix

A. Water System Standard Detail Drawings

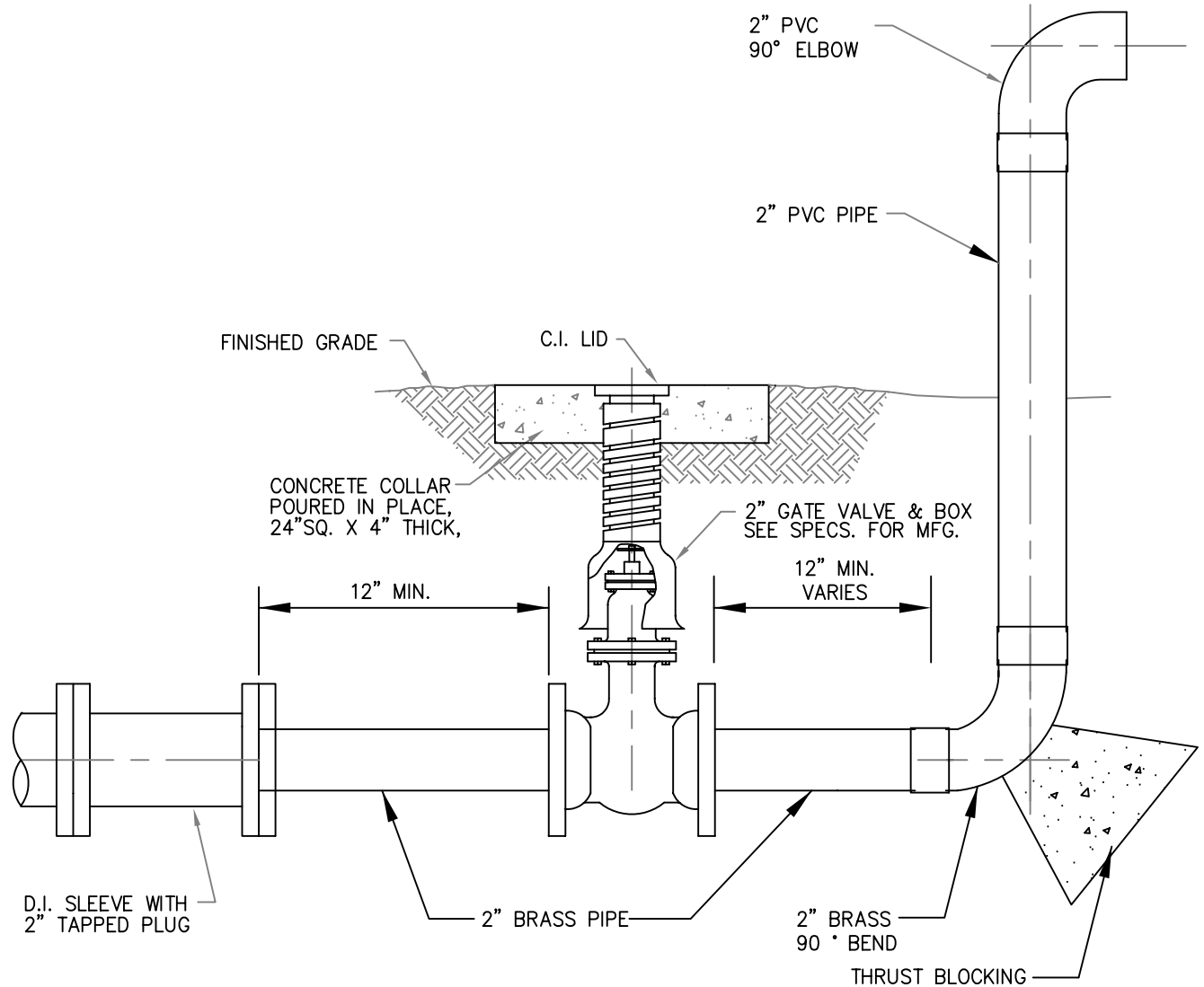
1. 2" Blow-Off Assembly
2. Gate Valve & Box
3. Blocking for Vertical Bends
4. Thrust Blocking
5. Creek or Stream Crossing
6. Service Connections
7. Fire Hydrant Assembly
8. Pipe Bedding
9. Long Side Service Casing
10. Pipe Anchor Detail
11. Railroad Crossing Bore
12. Highway Crossing Bore
13. Water Meter Pit Section View
14. Double Check Backflow Preventer
15. RPZ Type Backflow Preventer
16. 2" Loop at Cul-de-sac
17. Water Meter Pit for 4" to 6" Meters
18. Water Meter Pit for 8" to 12" Meters
19. Curb Stop Detail

B. Sanitary Sewer System Standard Detail Drawings

1. Standard Precast Manhole
2. Typical Manhole Invert Plans
3. Shallow Manhole
4. Drop Manhole Connection
5. Service Lateral
6. Cleanout
7. Pipe Bedding
8. Blocking for Vertical Bends
9. Thrust Blocking
10. Standard Manhole Frame & Cover
11. Air Release Valve in Shallow Manhole
12. Lift Station Wetwell Detail #1
13. Lift Station Wetwell Detail #2
14. Force Main Valve Pit
15. Lift Station Control Panel
16. Dumpster Pad Detail
17. Grease Trap Detail

C. General Standard Detail Drawings, General Notes, and Forms

1. Residential Street Utility Locations
2. DOT Pavement Replacement
3. Local Road & Driveway Pavement Replacement
4. Tracing Wire Test Station
5. General Notes for Water Distribution System Construction
6. General Notes for Sanitary Sewer System Construction
7. Utility Easement Form
8. Letter-of-Credit Form



WATER SYSTEM DETAILS
2" BLOW-OFF ASSEMBLY

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

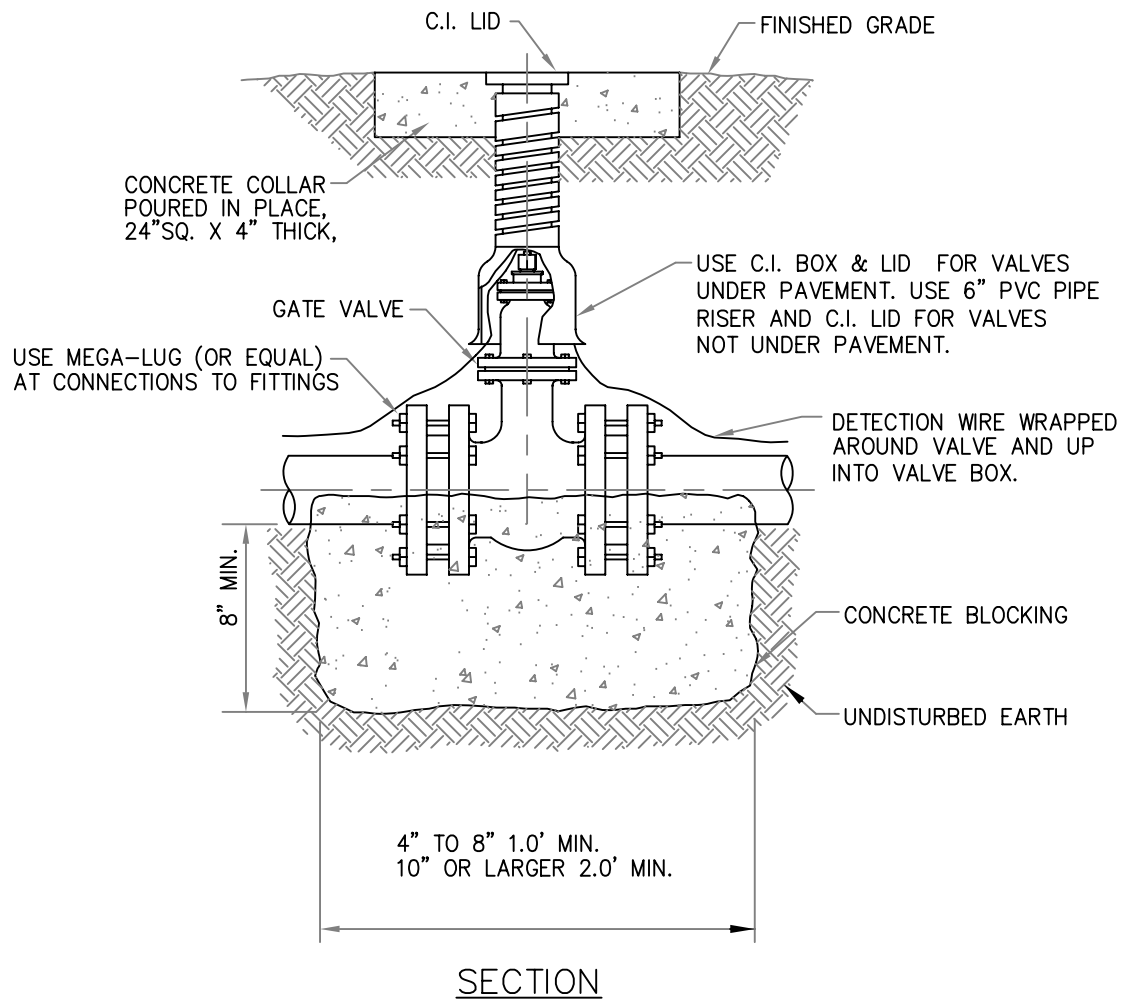
SCALE: NTS

DATE: SEPT. 21, 1998

DWG. NO.: WATER-01

NOTES

1. USE READY-MIX CONCRETE WITH 3,000 PSI STRENGTH @ 28 DAYS.
2. PLACE CONCRETE BEARING SURFACES AGAINST UNDISTURBED EARTH.
3. PLACE CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.
4. CONNECTION OF VALVES TO FITTINGS SHALL REQUIRE A MINIMUM OF 18 INCHES OF DUCTILE IRON PIPE.



WATER SYSTEM DETAILS
GATE VALVE & BOX

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

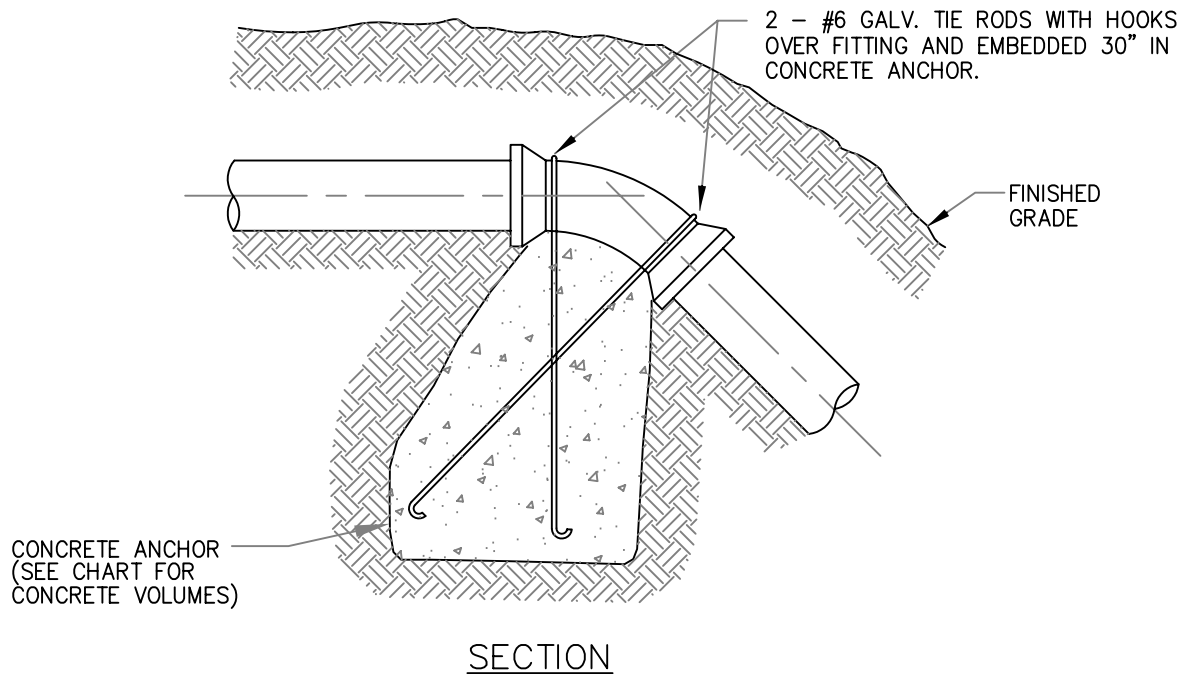
DATE: SEPT. 21, 1998

DWG. NO.: WATER-02

NOTES

1. USE READY-MIX CONCRETE WITH 3,000 PSI STRENGTH @ 28 DAYS.
2. PLACE CONCRETE CLEAR OF JOINT & JOINT ACCESSORIES.

VOLUME OF CONCRETE ANCHOR (CUBIC YARDS)				
FITTING DIAMETER	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4"	1.00	0.50	0.25	0.25
6"	1.75	1.00	0.50	0.25
8"	3.00	1.75	1.00	0.50
10"	4.75	2.50	1.25	0.75
12"	6.50	3.75	2.00	1.00
14"	7.75	5.00	2.50	1.50
16"	11.75	6.75	3.25	1.75



WATER SYSTEM DETAILS
BLOCKING FOR VERTICAL BENDS

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

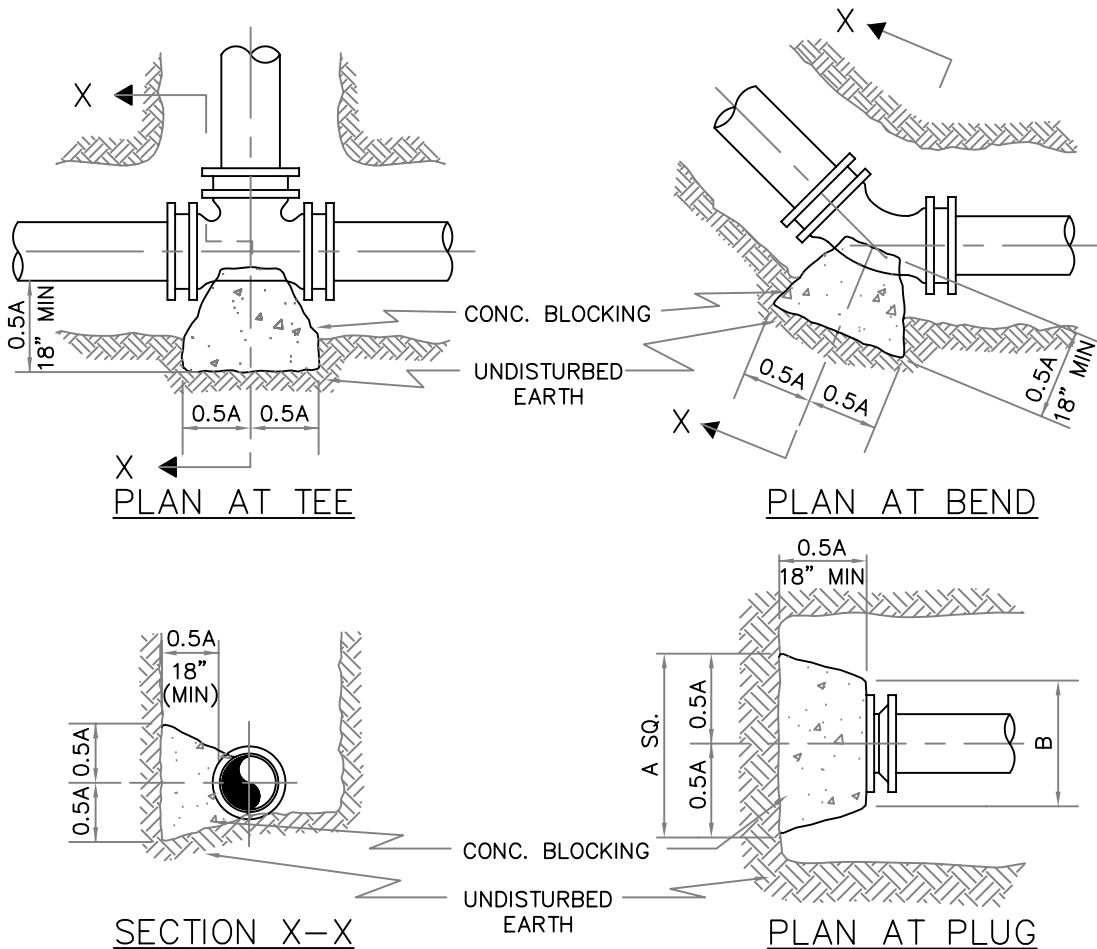
DATE: SEPT. 21,1998

DWG. NO.: WATER-03

NOTES

1. USE READY-MIX CONCRETE WITH 3,000 PSI STRENGTH @ 28 DAYS.
2. PLACE CONCRETE BEARING SURFACES AGAINST UNDISTURBED EARTH.
3. PLACE CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.
3. DIMINSIONS BASED ON SOIL BEARING OF 4000 P.S.I.

PIPE SIZE	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEES	PLUGS	
	A	A	A	A	A	A	B
4"	15"	12"	12"	12"	12"	12"	10"
6"	20"	16"	12"	12"	18"	18"	12"
8"	30"	20"	15"	12"	24"	24"	12"
10"	36"	26"	18"	14"	30"	30"	14"
12"	40"	32"	20"	16"	36"	36"	16"
14"	48"	36"	26"	18"	40"	40"	18"
16"	64"	42"	32"	20"	48"	48"	20"



WATER SYSTEM DETAILS
THRUST BLOCKING

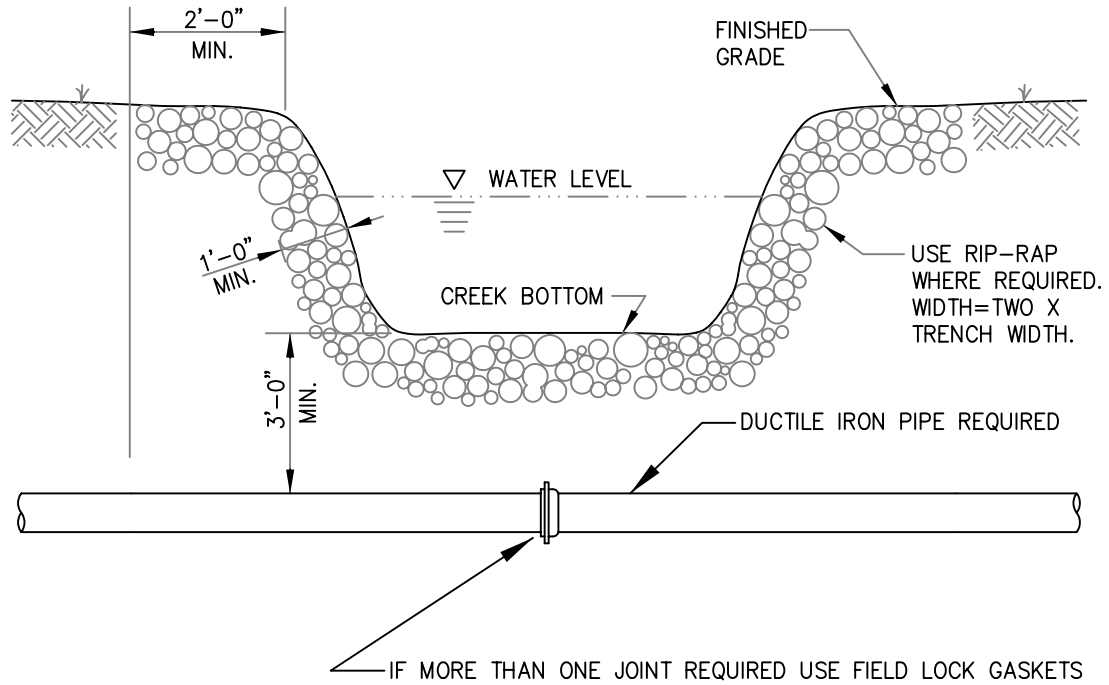
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

DATE: SEPT. 21,1998

DWG. NO.: WATER-04



SECTION

WATER SYSTEM DETAILS
CREEK OR STREAM CROSSING

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

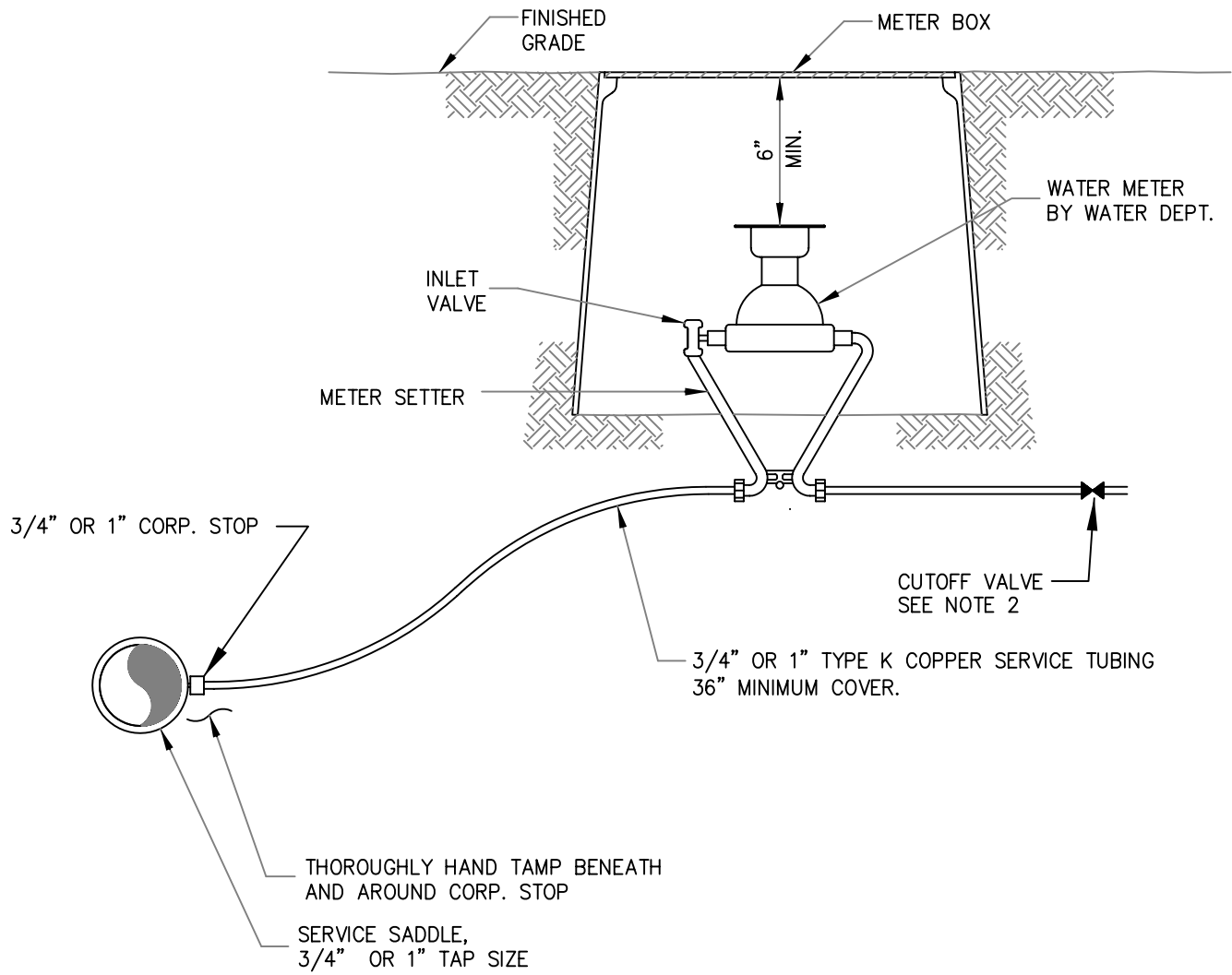
SCALE: NTS

DATE: SEPT. 21, 1998

DWG. NO.: WATER-05

NOTE:

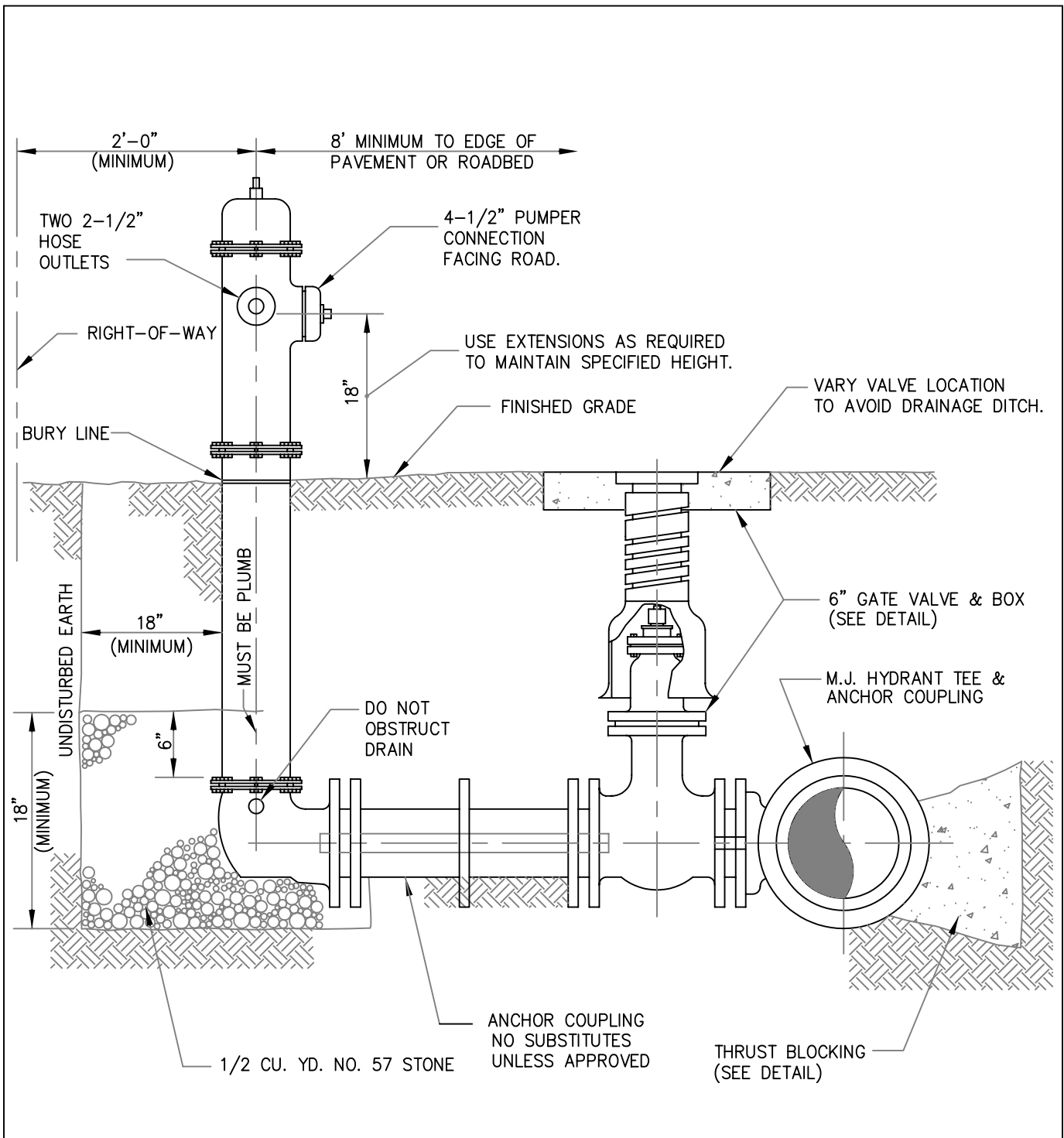
1. SEE SPECIFICATIONS FOR ACCEPTABLE MATERIALS AND MANUFACTURERS.
2. CUTOFF VALVE MUST BE IN PLACE BEFORE METER CAN BE INSTALLED.



WATER SYSTEM DETAILS
3/4" & 1" SERVICE CONNECTIONS

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC	SCALE: NTS	DATE: SEPT. 21,1998	DWG. NO.: WATER-06
---------------	------------	---------------------	--------------------



NOTE:
SEE SPECIFICATIONS FOR ACCEPTABLE MATERIALS AND MANUFACTURERS.

WATER SYSTEM DETAILS
FIRE HYDRANT ASSEMBLY

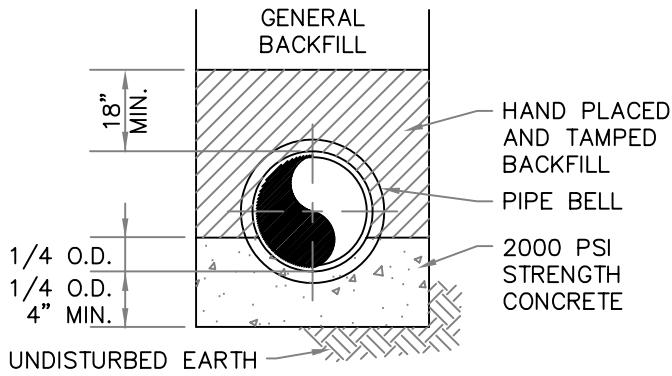
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

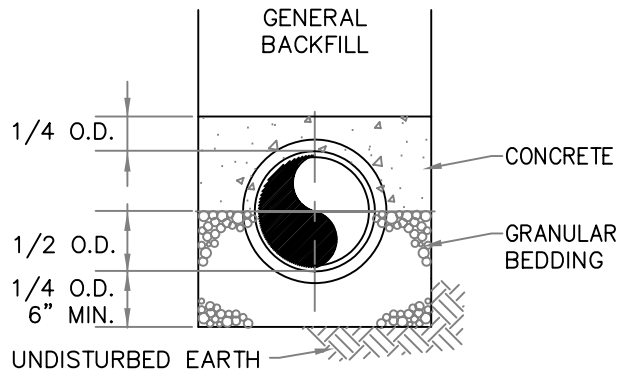
SCALE: NTS

DATE: SEPT. 21, 1998

DWG. NO.: WATER-07

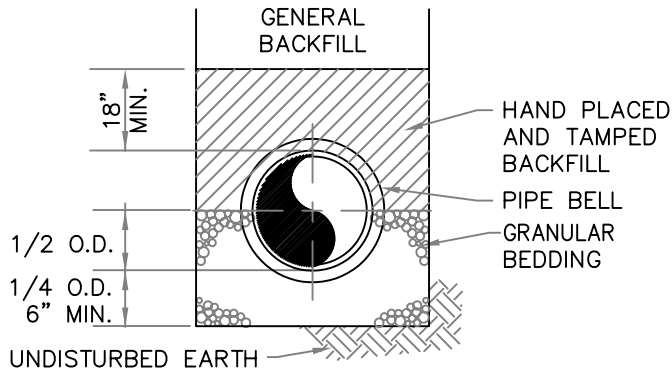


TYPE 1

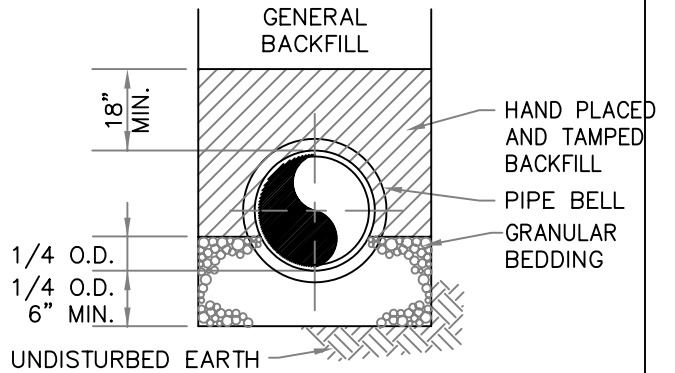


TYPE 2

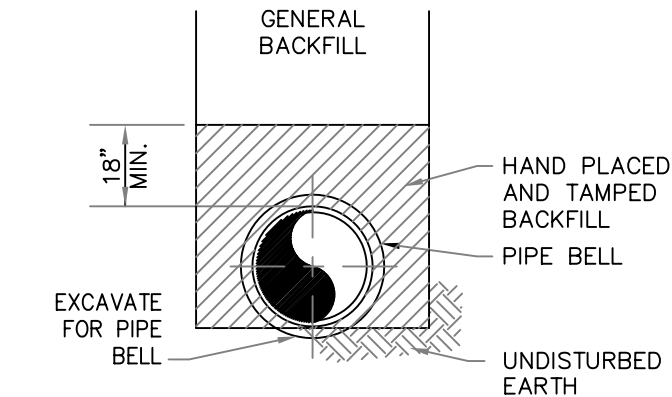
CLASS "A", USE EITHER TYPE



CLASS "B"

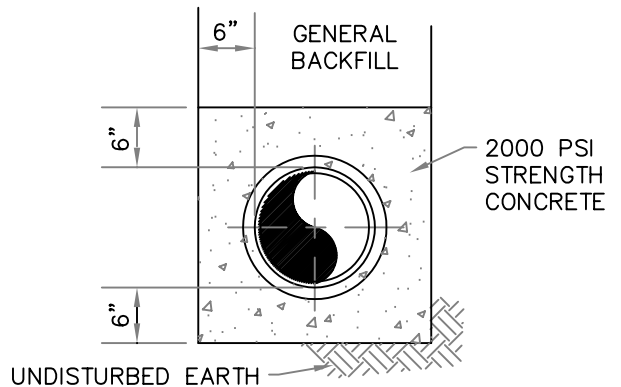


CLASS "C"



USE CLASS "D" BEDDING IN DRY EARTH TRENCHES ONLY.

CLASS "D"



CONCRETE ENCASEMENT

WATER SYSTEM DETAILS
PIPE BEDDING

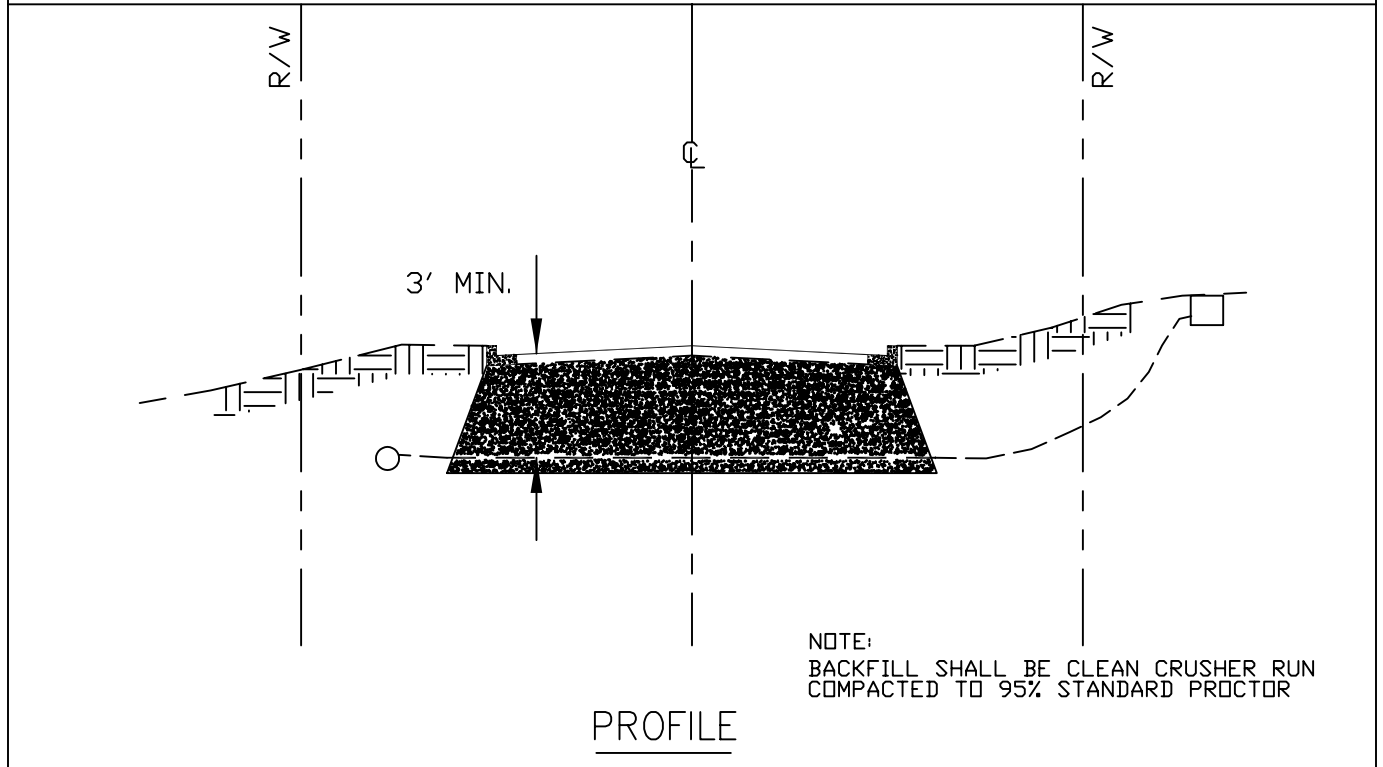
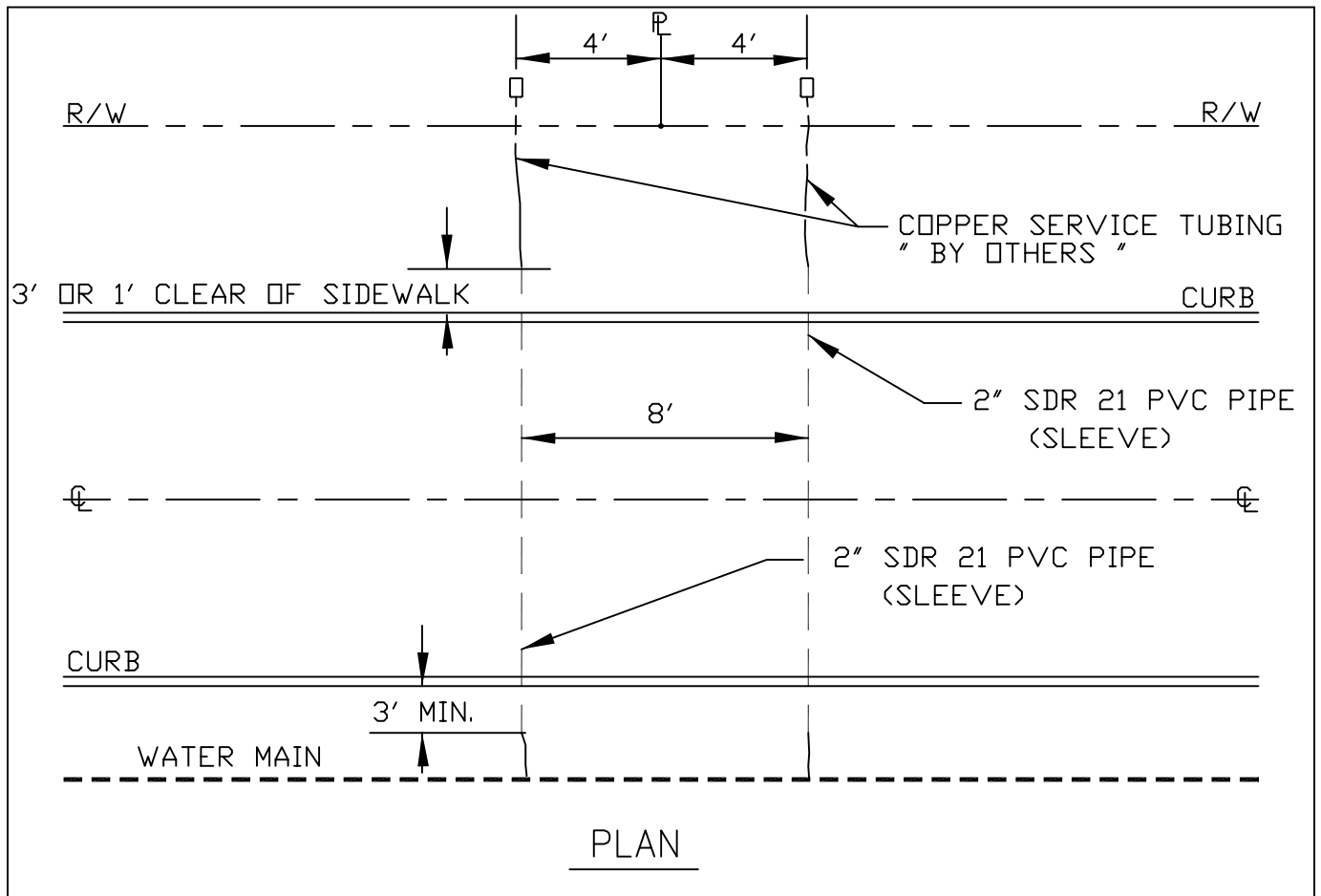
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

DATE: SEPT. 21, 1998

DWG. NO.: WATER-08



WATER SYSTEM DETAILS
LONG SIDE SERVICE CASING

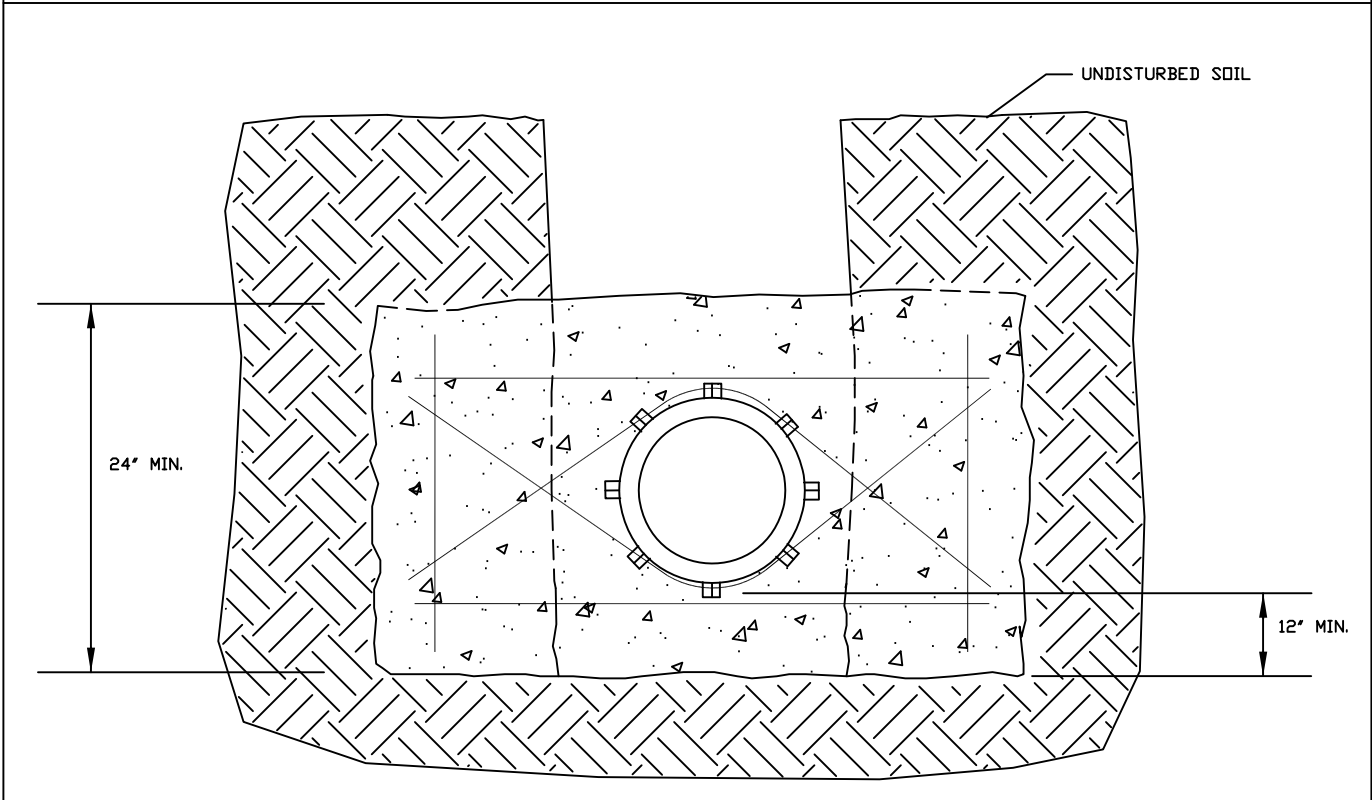
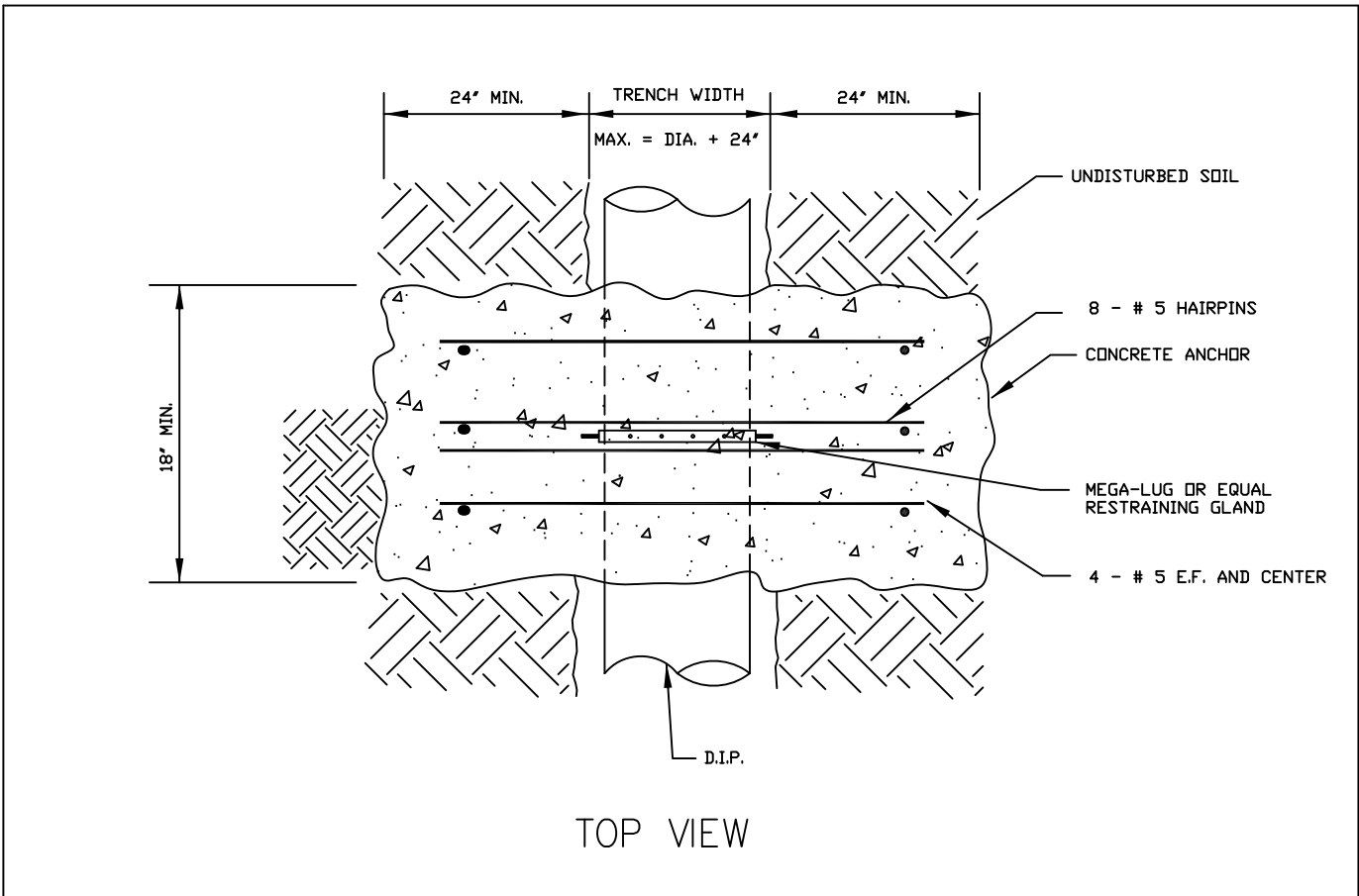
CITY OF CALHOUN
WATER AND SEWER CONSTRUCTION
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4750

DRAWN BY: JWC

SCALE: NTS

DATE: OCT. 5, 2005

DWG. NO.: WAT-09



WATER SYSTEM DETAILS
PIPE ANCHOR DETAIL

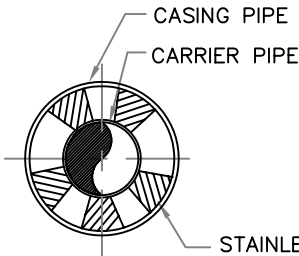
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC	SCALE: NTS	DATE: SEPT. 21,1998	DWG. NO.: WATER-10
---------------	------------	---------------------	--------------------

NOTES

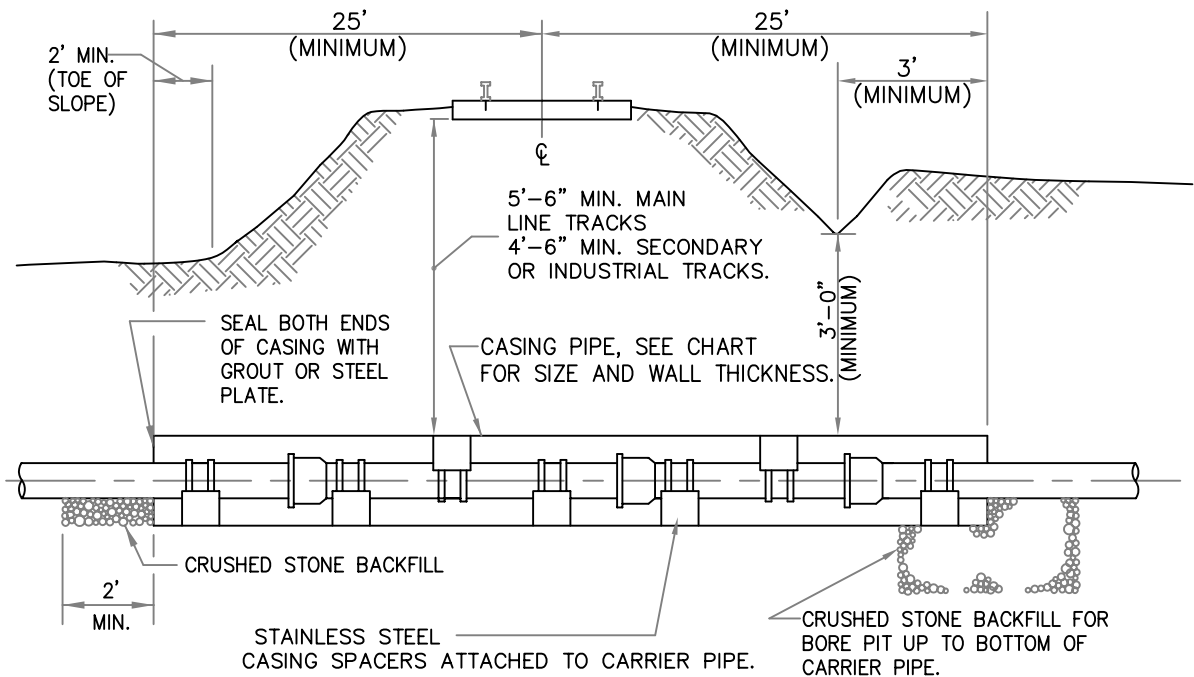
1. INSTALL CASING BY BORING AND JACKING, UNLESS OTHERWISE NOTED.
2. CARRIER PIPE IN CASING SHALL BE DUCTILE IRON PIPE, PUSH-ON JOINTS. PROVIDE RESTRAINED JOINTS, U.S. FIELD LOK OR EQUAL FOR 12" AND SMALLER.

DUCTILE IRON CARRIER PIPE		STEEL CASING PIPE	
INSIDE DIA.	MAX O.D.	NOMINAL DIA.	WALL THICK.
6"	11"	16"	0.250"
8"	13 1/2"	18"	0.250"
10"	15 1/2"	20"	0.375"
12"	18"	24"	0.375"
14"	20 1/4"	26"	0.375"
16"	22 1/2"	28"	0.500"
18"	24 3/4"	30"	0.500"
20"	27"	32"	0.500"
24"	31 1/2"	36"	0.500"



STAINLESS STEEL CASING PACERS
(MINIMUM OF 2 PER JOINT OR AS REQUIRED BY MANUFACTURER)

SECTION



WATER SYSTEM DETAILS
RAILROAD CROSSING

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

DATE: DEC. 8 1997

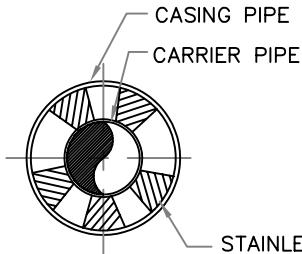
DWG. NO.: WAT-11

C:\ACADWIN\DWGS\DETAILS\MISC-WAT.DWG

NOTES

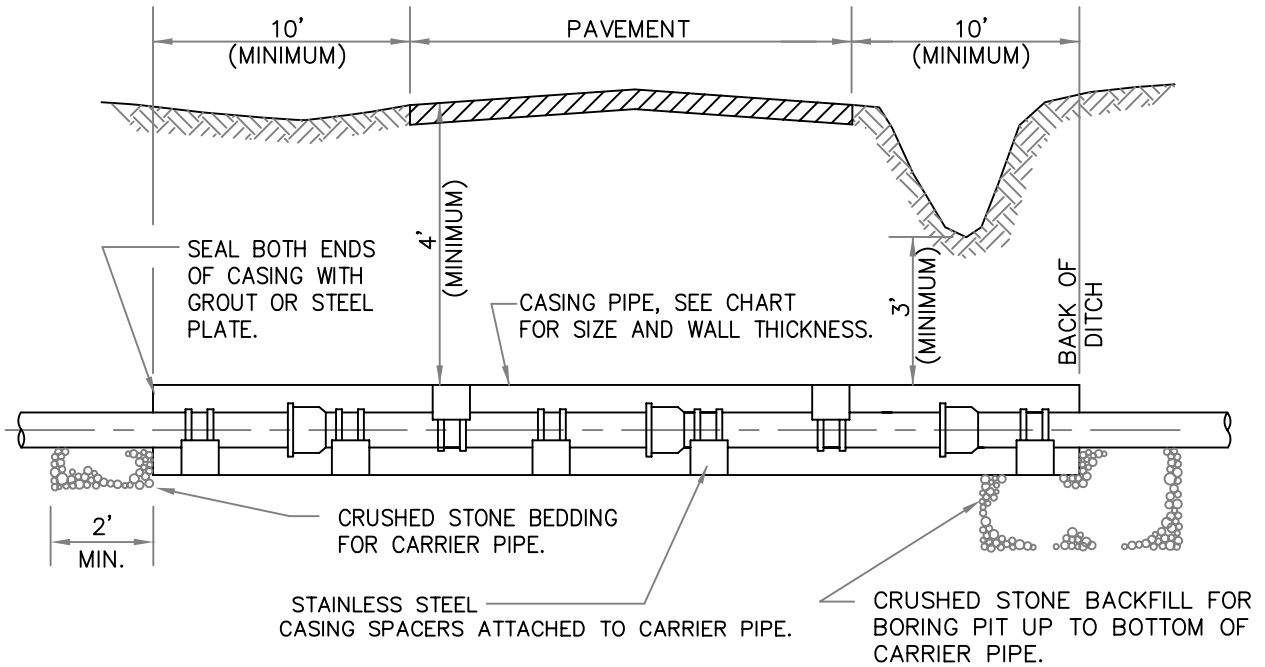
1. INSTALL CASING BY BORING AND JACKING, UNLESS OTHERWISE NOTED.
2. CARRIER PIPE IN CASING SHALL BE DUCTILE IRON PIPE, PUSH-ON JOINTS. PROVIDE RESTRAINED JOINTS, U.S. FIELD LOK OR EQUAL FOR 12" AND SMALLER.

DUCTILE IRON CARRIER PIPE		STEEL CASING PIPE	
INSIDE DIA.	MAX O.D.	NOMINAL DIA.	WALL THICK.
6"	11"	16"	0.250"
8"	13 1/2"	18"	0.250"
10"	15 1/2"	20"	0.375"
12"	18"	24"	0.375"
14"	20 1/4"	26"	0.375"
16"	22 1/2"	28"	0.500"
18"	24 3/4"	30"	0.500"
20"	27"	32"	0.500"
24"	31 1/2"	36"	0.500"



STAINLESS STEEL CASING PACERS
(MINIMUM OF 2 PER JOINT OR AS REQUIRED BY MANUFACTURER)

SECTION



WATER SYSTEM DETAILS
HIGHWAY CROSSING

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

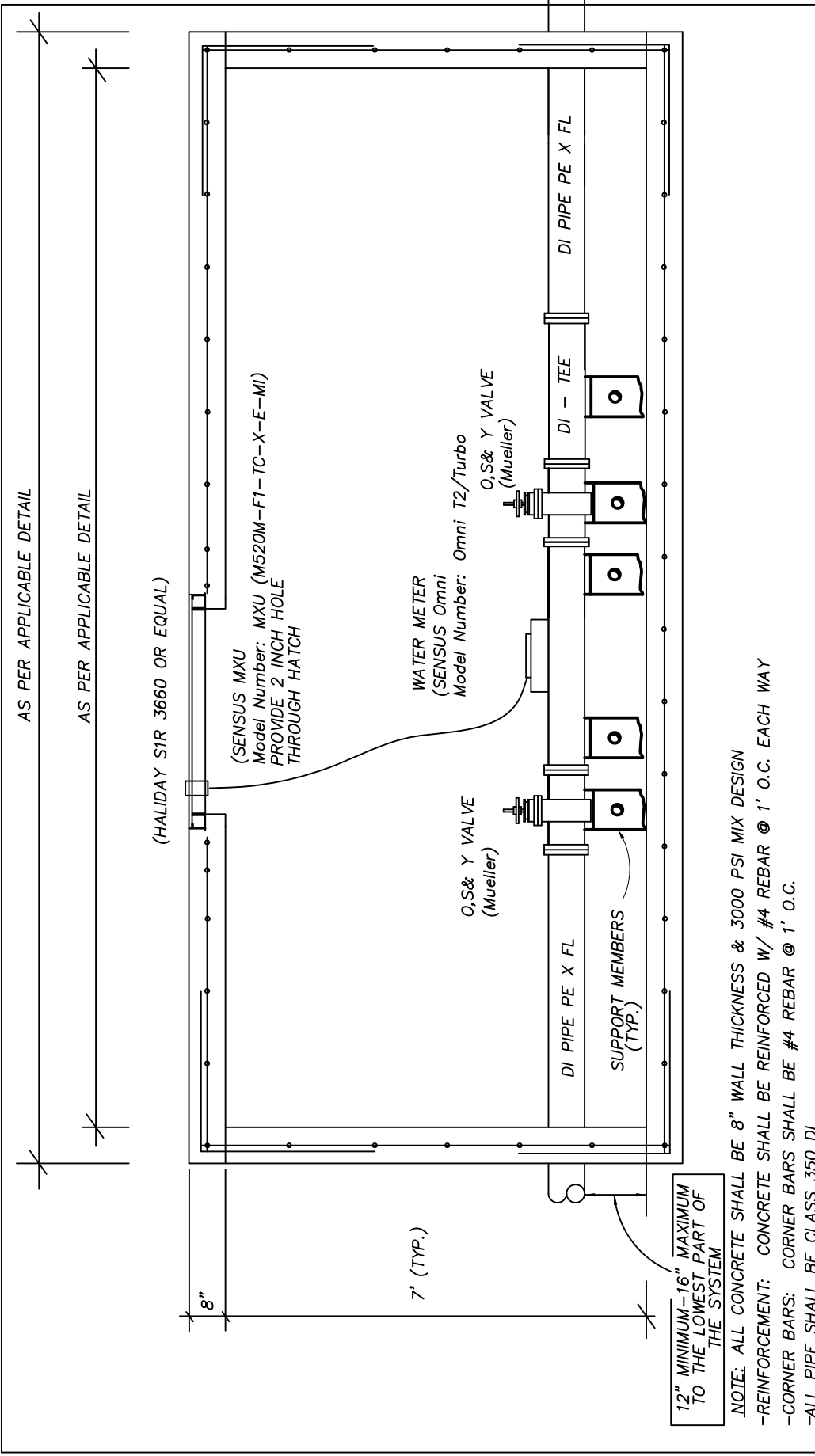
DRAWN BY: ATL

SCALE: NTS

DATE: DEC. 10 1996

DWG. NO.: WAT-12

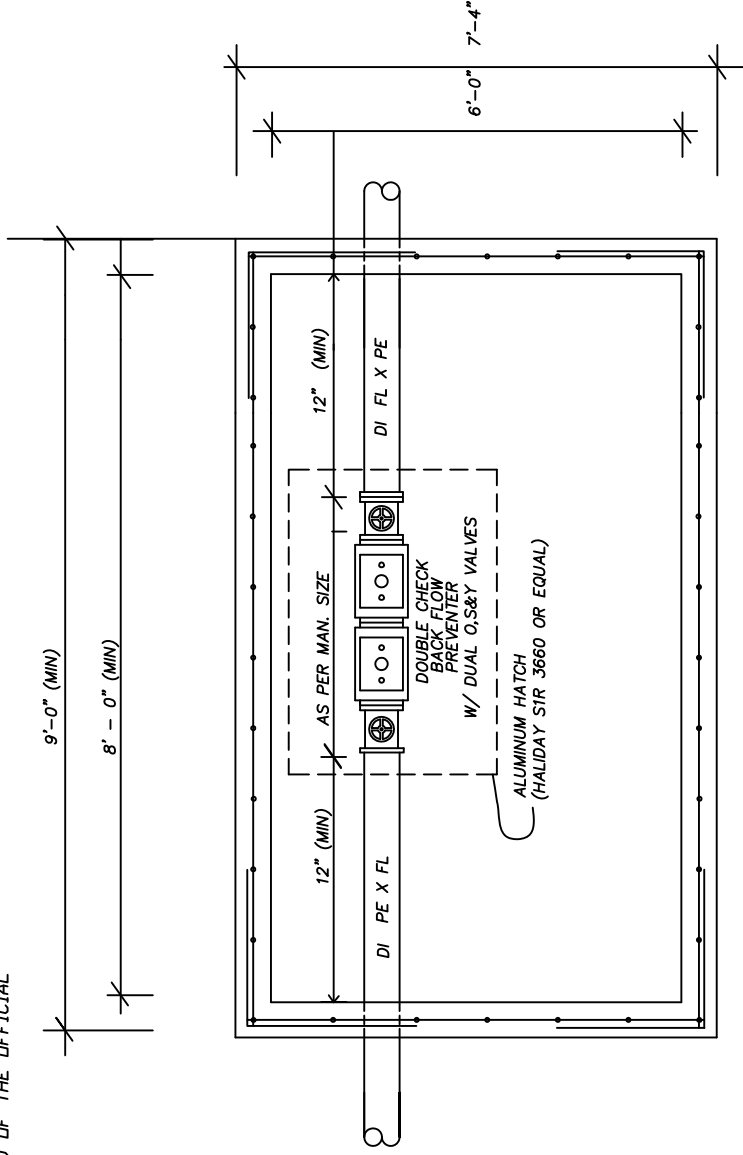
C:\ACADWIN\DWGS\DETAILS\MISC-WAT.DWG



CITY OF CALHOUN ENGINEERING/INSPECTION DEPARTMENT P.O. BOX 248 CALHOUN, GEORGIA 30701 TELEPHONE (706) 602-6081	
WATER METER PIT SECTION VIEW	DATE: 2/12/2012
DRAWN BY: DMB	SCALE: NTS
DWG. NO.: WATER-13	

ALL INSTALLATIONS ARE SUBJECT TO CHAPTER 50 OF THE OFFICIAL
CODE OF ORDINANCES OF CALHOUN, GEORGIA

Codified through
Ordinance No. 905, adopted December 19, 2011.



NOTE: ALL CONCRETE SHALL BE 6" THICKNESS & 3000 PSI

-REINFORCEMENT: CONCRETE SHALL BE REINFORCED W/ #4 REBAR @ 1' O.C. EACH WAY

-CORNER BARS: CORNER BARS SHALL BE #4 REBAR @ 1' O.C.

-ALL PIPE SHALL BE CLASS 350 DI

-ALL PIPE, FITTINGS, & BFP SHALL BE FULLY SUPPORTED
BY CONCRETE OR STEEL PIERS

- INSTALLATION AND MAINTENANCE ARE THE OWNERS
RESPONSIBILITY

- ANNUAL TESTING BY CERTIFIED TESTER IS REQUIRED

- ALL RPZ TYPE BACK FLOWS SHALL BE INSTALLED ABOVE GROUND
A MINIMUM OF 12" ABOVE GRADE AND NOT MORE THAN 36" ABOVE GRADE.

DOUBLE CHECK BACKFLOW ASSEMBLY
SIZES 4" TO 12"
PLAN VIEW

CITY OF CALHOUN
ENGINEERING/INSPECTION
DEPARTMENT
700 WEST LINE STREET
CALHOUN, GEORGIA 30701
TELEPHONE (706) 602-6081

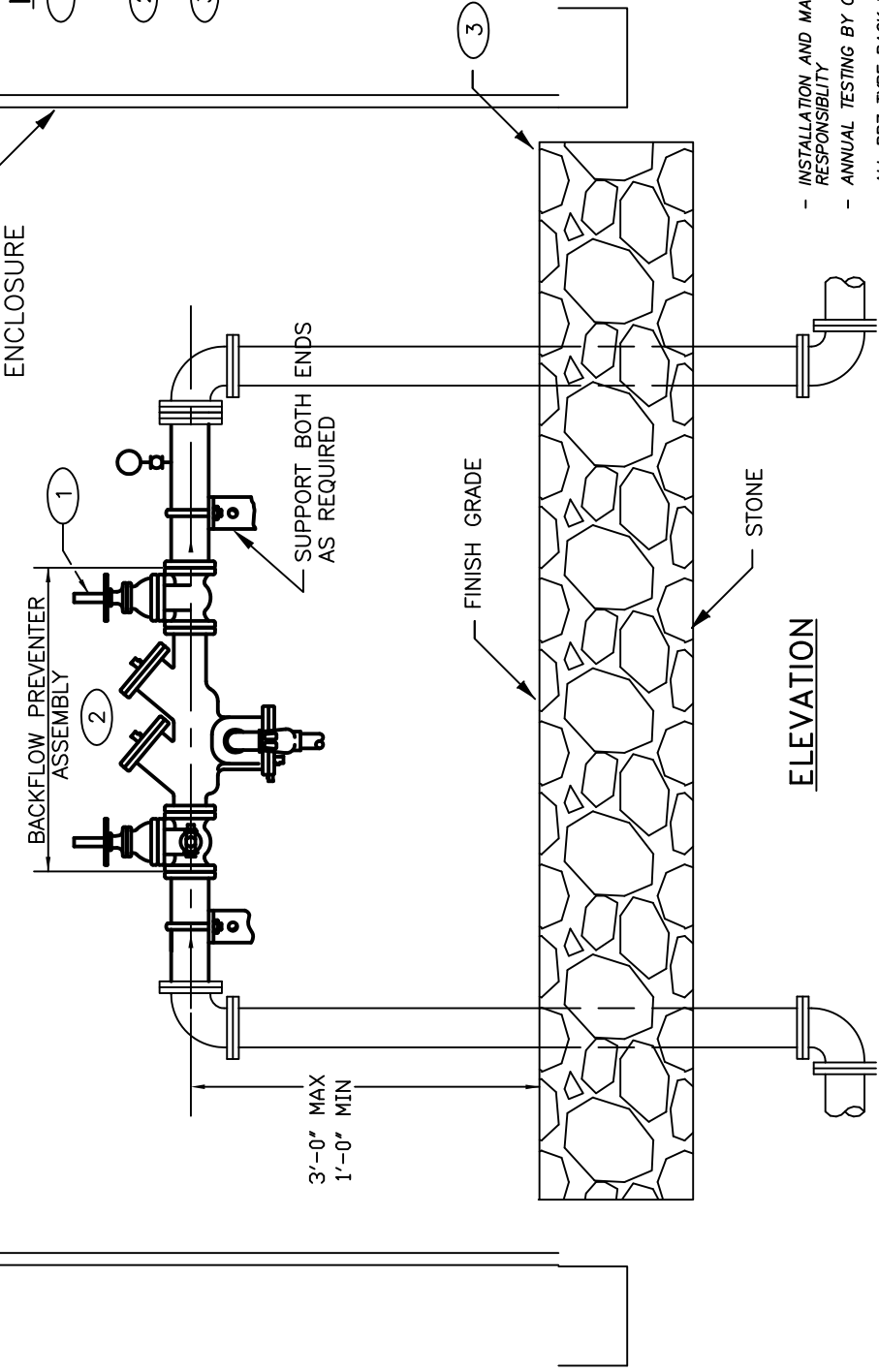
DRAWN BY: JGS

SCALE: NTS

DATE: Rev 4/19/12

DWG. NO.: WATER-14

PROTECTIVE ENCLOSURE



KEYED NOTES:

- ① PROVIDE ADEQUATE CLEARANCE ABOVE UNIT FOR OPERATION OF VALVES OR UNIT REPAIR.
- ② BYPASS PIPING AROUND BFP IS PROHIBITED.
- ③ PROVIDE POSITIVE DRAINAGE FOR FULL FLOW AT DISCHARGE.

- INSTALLATION AND MAINTENANCE ARE THE OWNERS RESPONSIBILITY
- ANNUAL TESTING BY CERTIFIED TESTER IS REQUIRED
- ALL RPZ TYPE BACK FLOWS SHALL BE INSTALLED ABOVE GROUND A MINIMUM OF 12" ABOVE GRADE AND NOT MORE THAN 36" ABOVE GRADE.

RPZ TYPE BACKFLOW DEVICE
2" TO 12"
PROFILE VIEW

CITY OF CALHOUN
ENGINEERING/INSPECTION
DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 602-6081

DRAWN BY: JGS

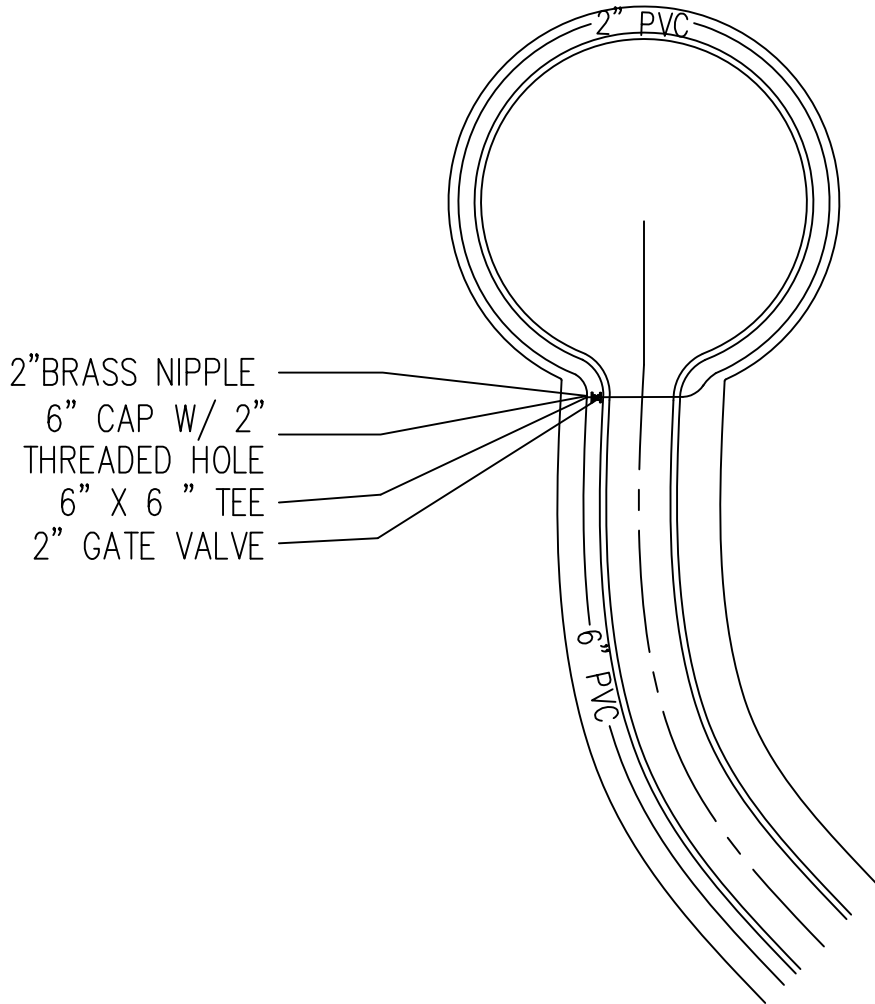
SCALE: NTS

DATE: 9/25/2007

DWG. NO.: WATER-15

1

NOTE:
USE DUCTILE IRON BETWEEN SLEEVE AND NEAREST FITTING WHEN LESS THAN 20'.



WATER SYSTEM DETAILS
2" LOOP AT CUL-DE-SAC

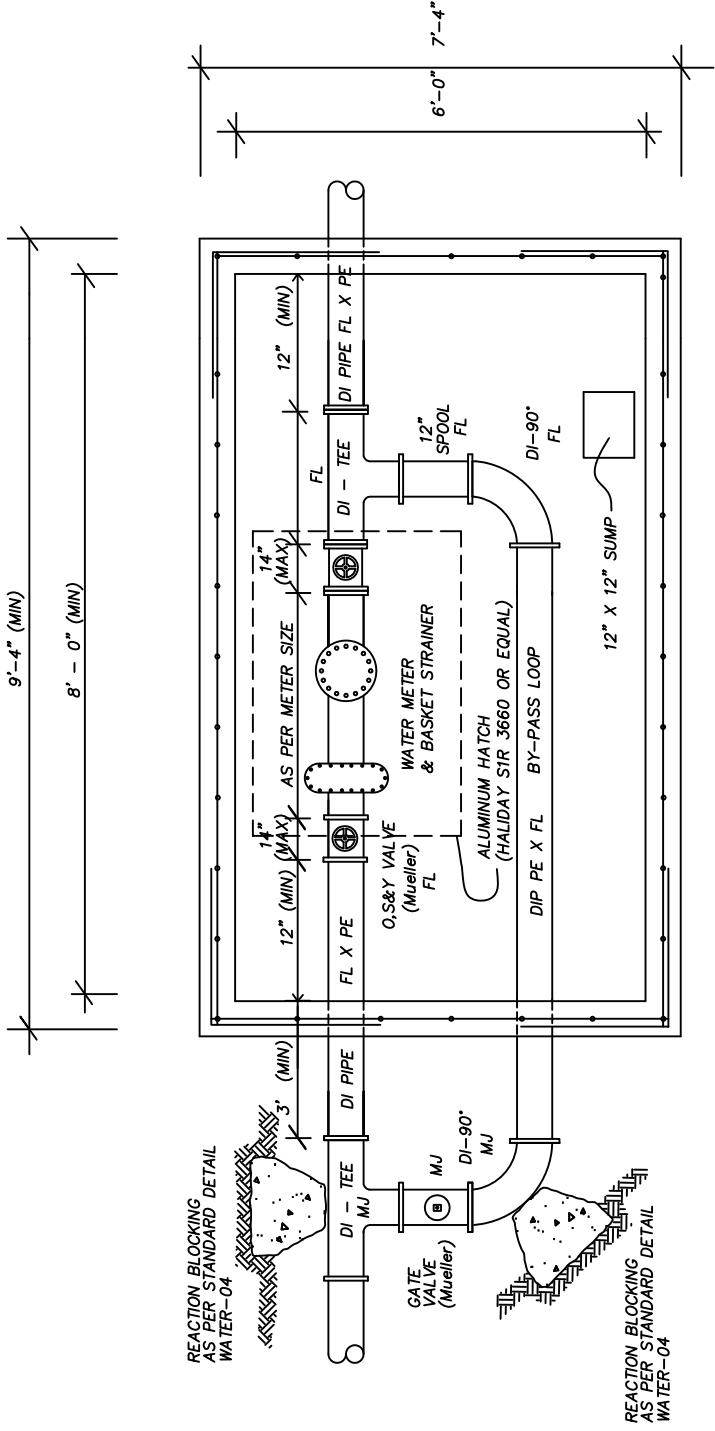
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JGS

SCALE: NTS

DATE: DEC. 6, 2006

DWG. NO.: WATER-16

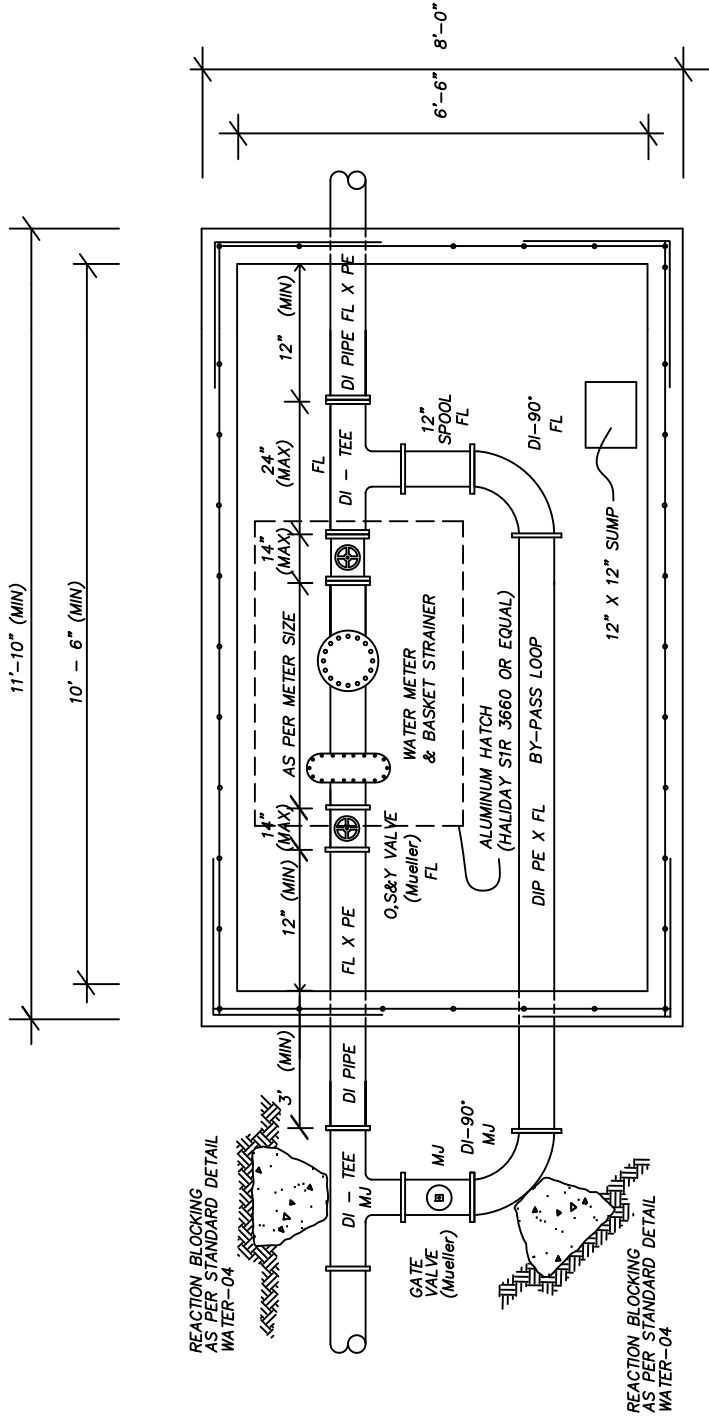


- NOTE:** ALL CONCRETE SHALL BE 8" WALL THICKNESS & 3000 PSI MIX DESIGN
- REINFORCEMENT: CONCRETE SHALL BE REINFORCED W/ #4 REBAR @ 1' O.C. EACH WAY
 - CORNER BARS: CORNER BARS SHALL BE #4 REBAR @ 1' O.C.
 - ALL PIPE SHALL BE CLASS 350 DI
 - ALL PIPE, FITTINGS, METERS, & BFP SHALL BE FULLY SUPPORTED BY CONCRETE OR STEEL PIERS

CITY OF CALHOUN
 ENGINEERING/INSPECTION
 DEPARTMENT
 P.O. BOX 248
 CALHOUN, GEORGIA 30701
 TELEPHONE (706) 602-6081

WATER METER PIT
WATER METERS 4" TO 6"
PLAN VIEW

DRAWN BY: DMB	SCALE: NTS	DATE: 2/12/2012	DWG. NO.: WATER-17
---------------	------------	-----------------	--------------------



- NOTE:** ALL CONCRETE SHALL BE 8" WALL THICKNESS & 3000 PSI MIX DESIGN
- REINFORCEMENT: CONCRETE SHALL BE REINFORCED W/ #4 REBAR @ 1' O.C. EACH WAY
 - CORNER BARS: CORNER BARS SHALL BE #4 REBAR @ 1' O.C.
 - ALL PIPE SHALL BE CLASS 350 DI
 - ALL PIPE, FITTINGS, METERS, & BFP SHALL BE FULLY SUPPORTED BY CONCRETE OR STEEL PIERS

CITY OF CALHOUN
 ENGINEERING/INSPECTION
 DEPARTMENT
 P.O. BOX 248
 CALHOUN, GEORGIA 30701
 TELEPHONE (706) 602-6081

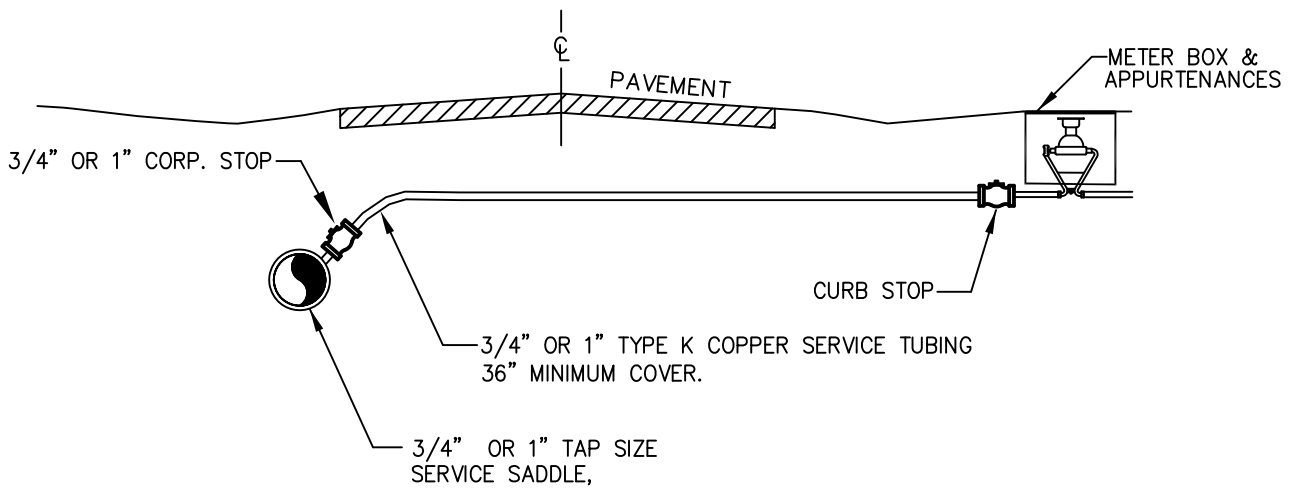
WATER METER PIT
WATER METERS 8" TO 12"
PLAN VIEW

DRAWN BY: DMB

SCALE: NTS

DATE: 2/12/2012

DWG. NO.: WATER-18



NOTES

1. SEE SPECIFICATIONS FOR ACCEPTABLE MATERIALS AND MANUFACTURERES.
2. INSTALL CURB STOP ON SERVICE LINES OUTSIDE OF THE METER BOX.

WATER SYSTEM DETAILS
SERVICE CONNECTIONS W/ CURB STOP

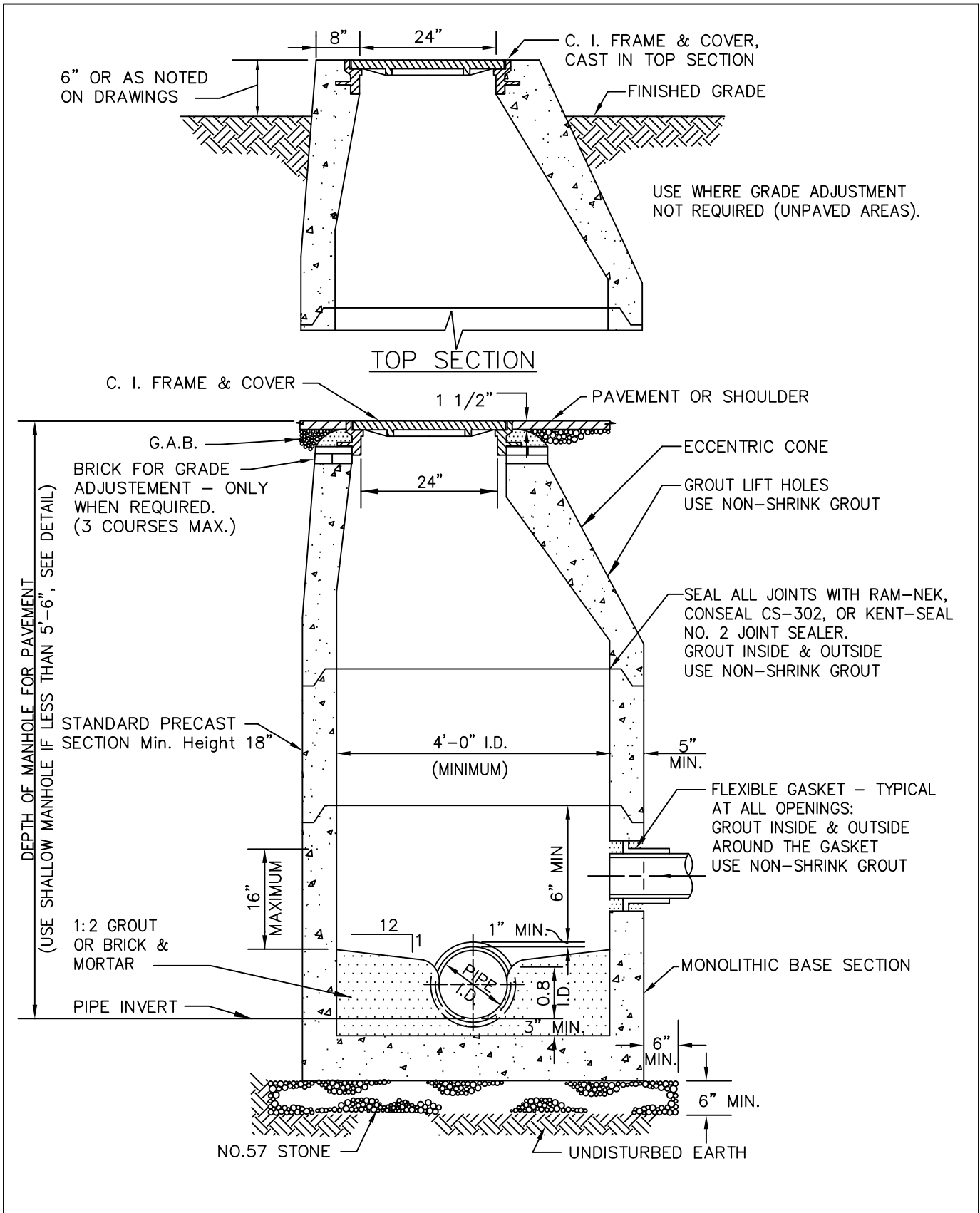
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: KWE

SCALE: NTS

DATE: APR. 23, 2014

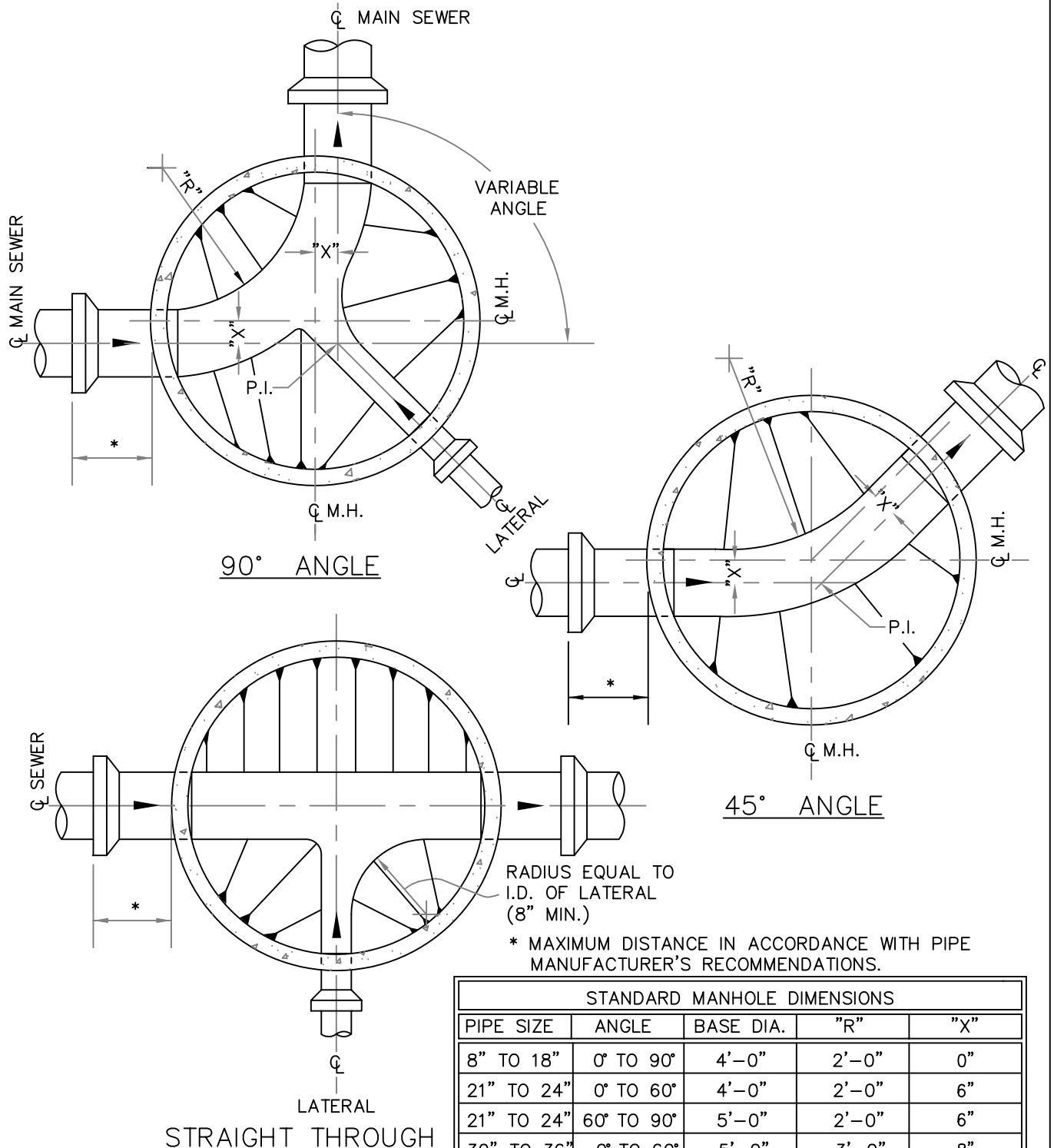
DWG. NO.: WAT-19



SEWER SYSTEM DETAILS
STANDARD WETCAST MANHOLE

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC	SCALE: NTS	REV. DATE: 04-01-09	DWG. NO.: SEWER-01
---------------	------------	---------------------	--------------------



SEWER SYSTEM DETAILS
TYPICAL MANHOLE INVERT PLANS

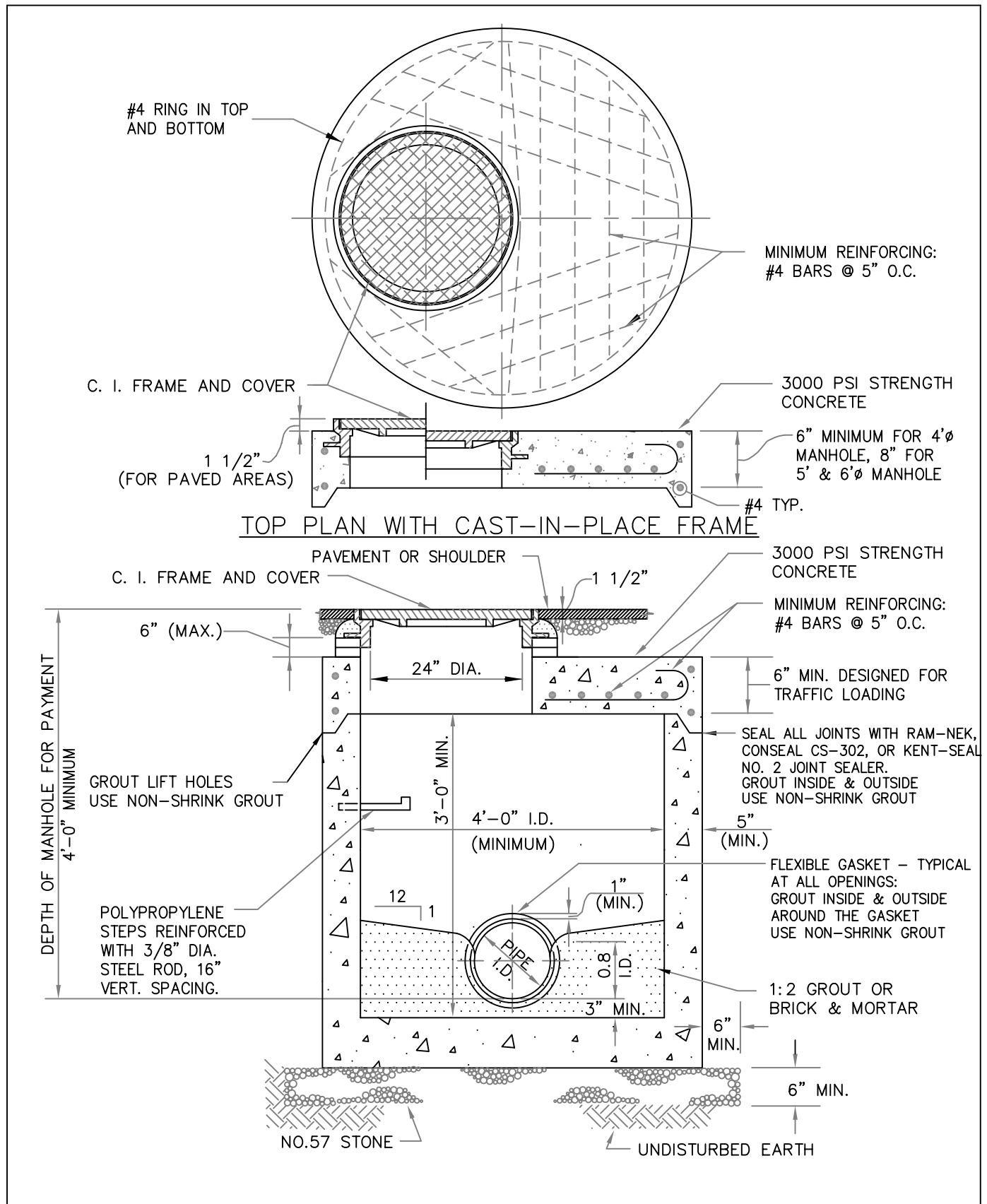
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

DATE: SEPT. 21, 1998

DWG. NO.: SEWER-02



SEWER SYSTEM DETAILS
SHALLOW MANHOLE

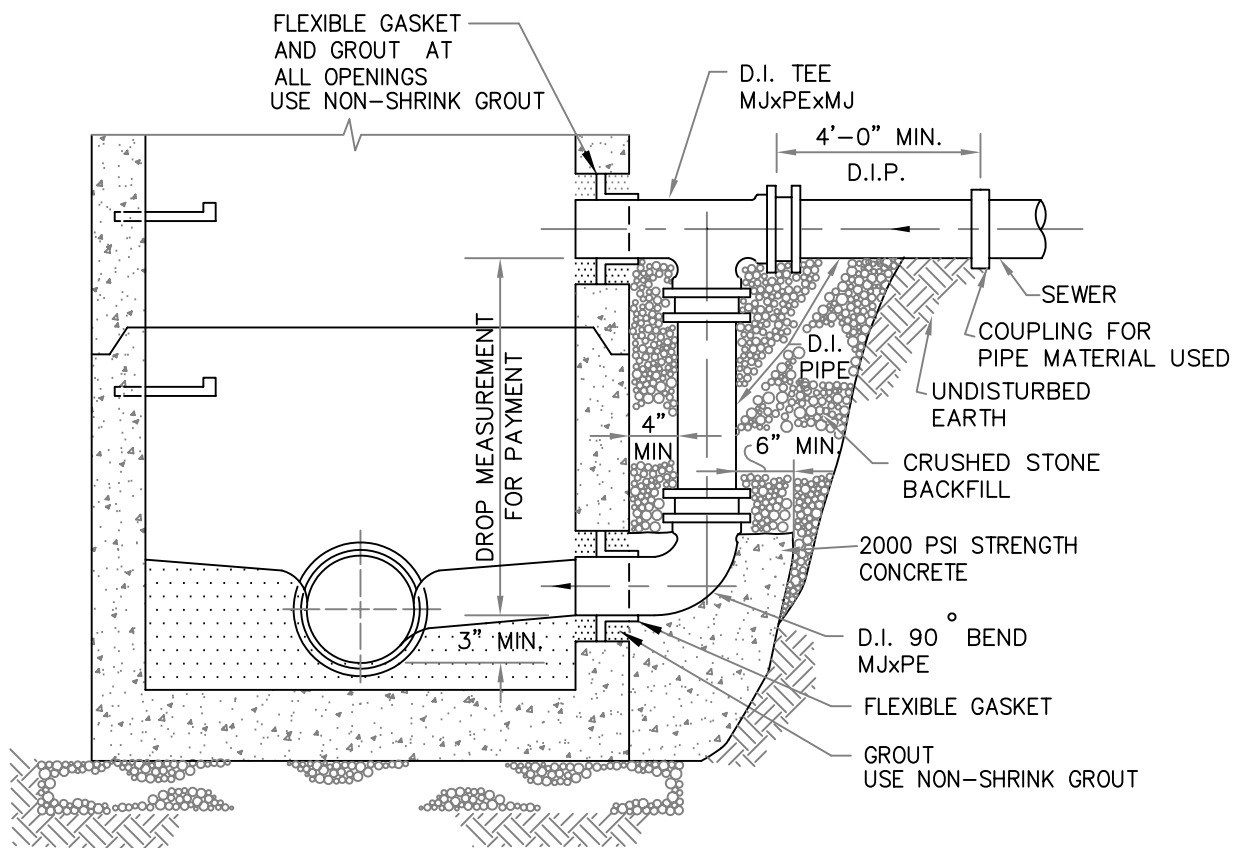
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC	SCALE: NTS	DATE: SEPT. 21,1998	DWG. NO.: SEWER-03
---------------	------------	---------------------	--------------------

NOTES

1. USE READY-MIX CONCRETE WITH 3,000 PSI STRENGTH @ 28 DAYS.
2. SEE STANDARD WETCAST MANHOLE DETAIL FOR TOP SECTION OF MANHOLE.

DROP CONNECTION SCHEDULE		
SEWER SIZE	DROP SIZE	MINIMUM DROP
6"	6"	24"
8"	8"	24"
10"	8"	24"
12"	10"	36"
15"	12"	40"



SEWER SYSTEM DETAILS
DROP CONNECTION

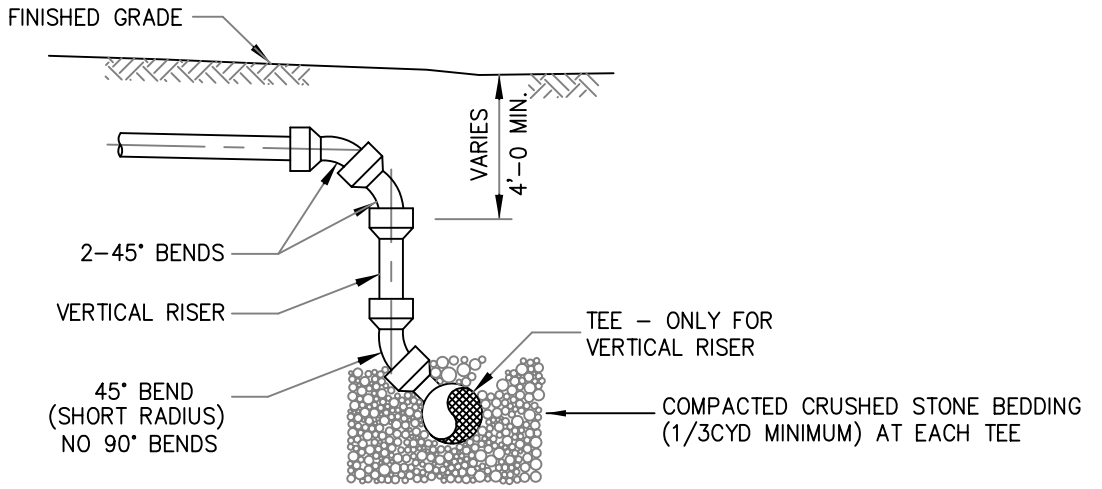
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

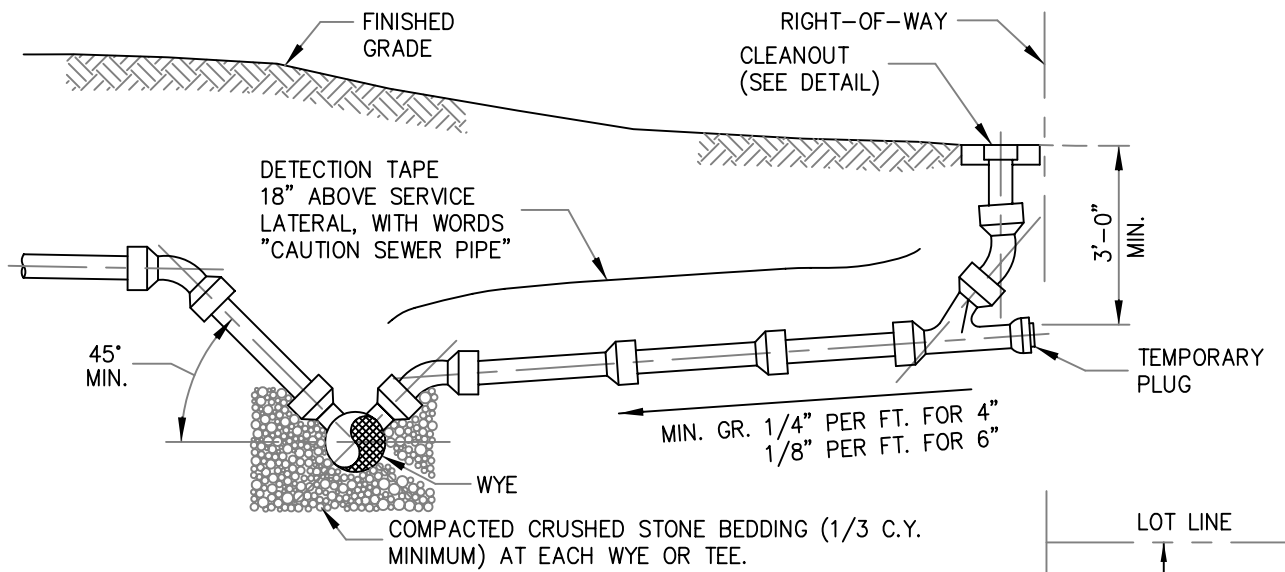
SCALE: NTS

DATE: SEPT. 21, 1998

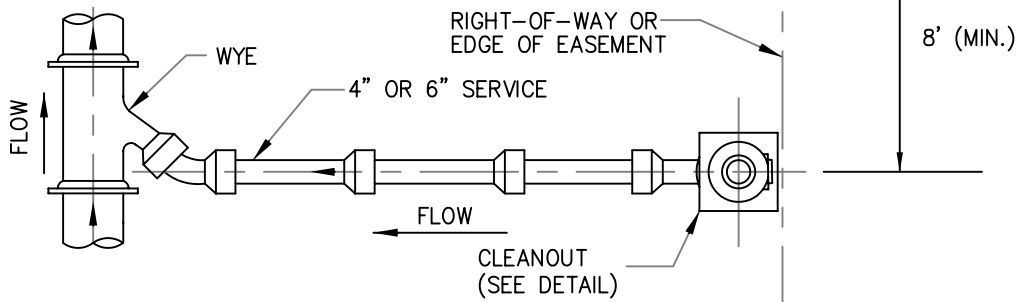
DWG. NO.: SEWER-04



VERTICAL RISER SECTION



STANDARD RISER SECTION



PLAN

SEWER SYSTEM DETAILS
SERVICE LATERAL

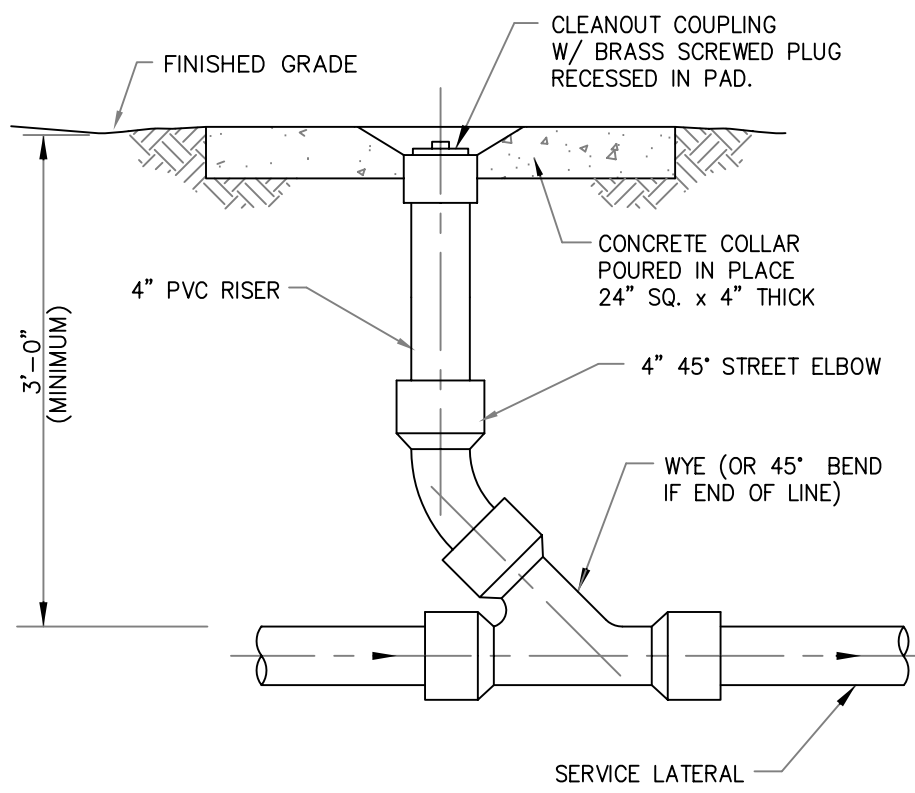
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

DATE: OCT. 5, 2005

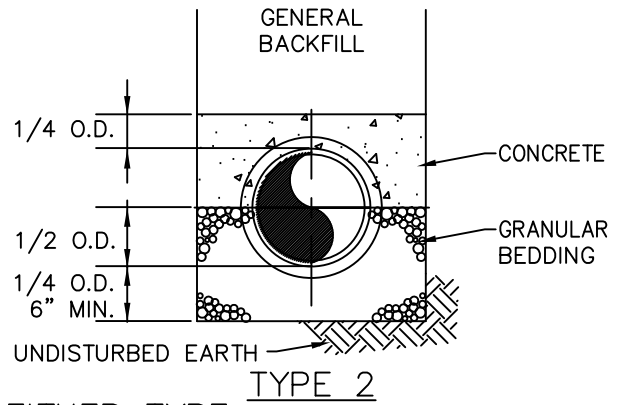
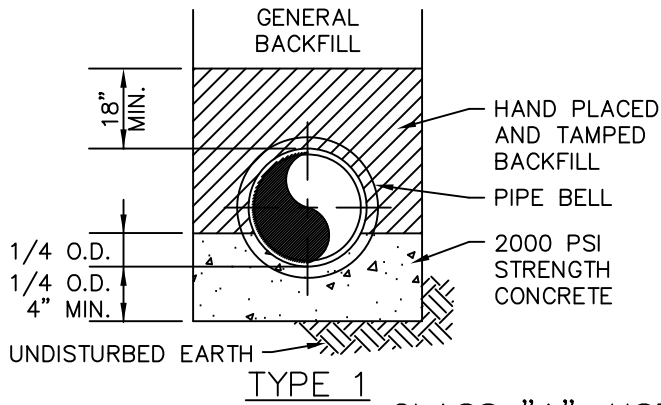
DWG. NO.: SEWER-05



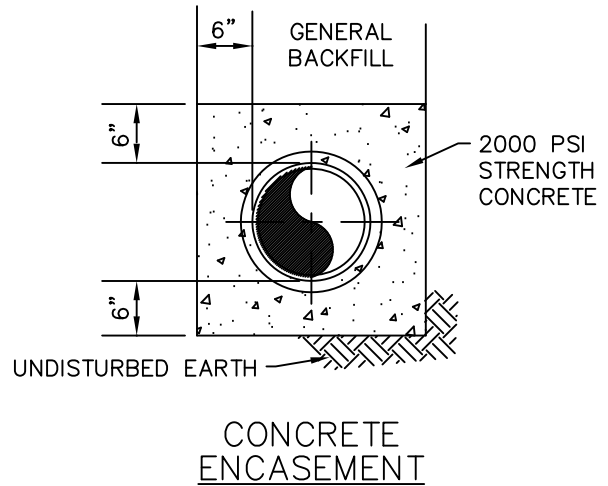
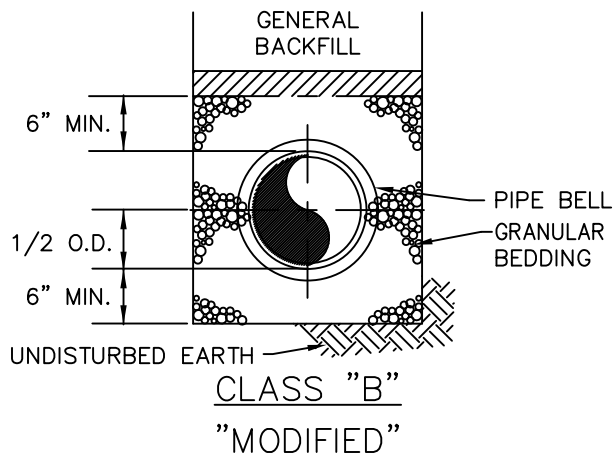
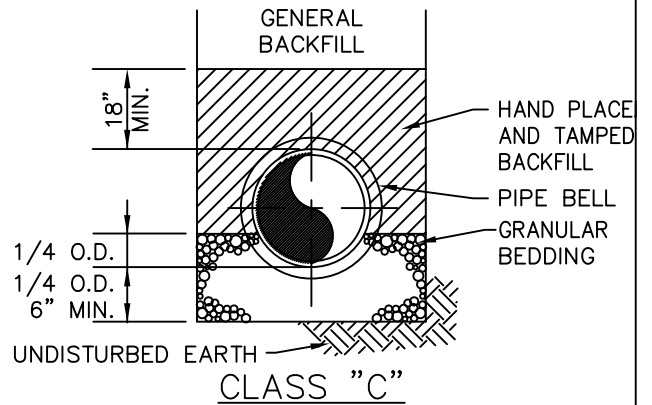
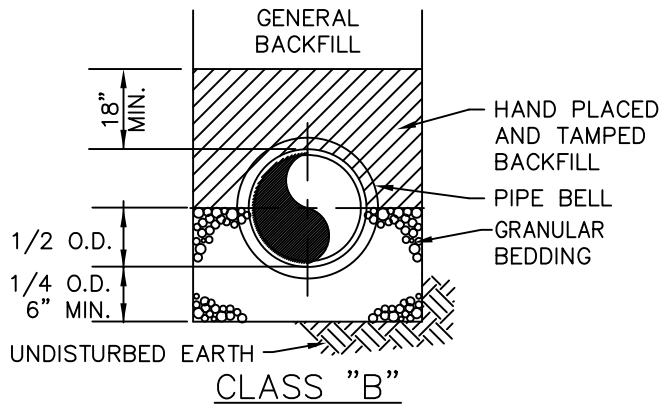
SEWER SYSTEM DETAILS
CLEANOUT

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC	SCALE: NTS	DATE: OCT. 5, 2005	DWG. NO.: SEWER-06
---------------	------------	--------------------	--------------------



CLASS "A", USE EITHER TYPE



SEWER SYSTEM DETAILS
PIPE BEDDING

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

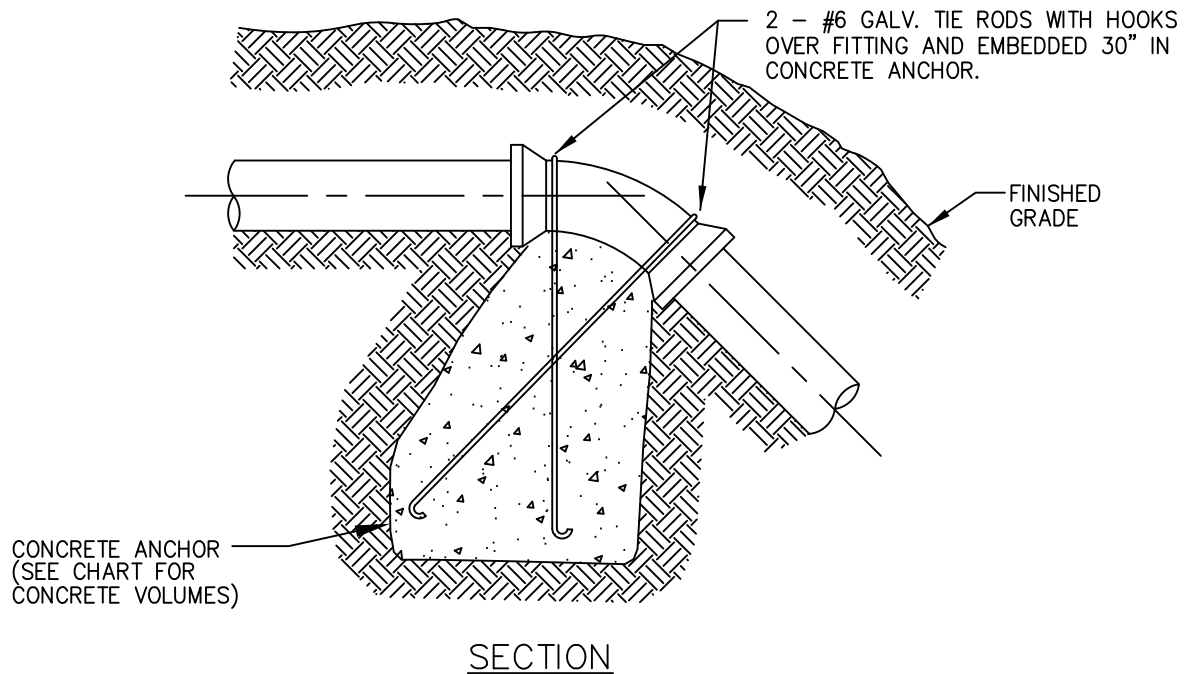
DATE: JAN. 4, 2007

DWG. NO.: SEWER - 07

NOTES

1. USE READY-MIX CONCRETE WITH 3,000 PSI STRENGTH @ 28 DAYS.
2. PLACE CONCRETE CLEAR OF JOINT & JOINT ACCESSORIES.

VOLUME OF CONCRETE ANCHOR (CUBIC YARDS)				
FITTING DIAMETER	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4"	1.00	0.50	0.25	0.25
6"	1.75	1.00	0.50	0.25
8"	3.00	1.75	1.00	0.50
10"	4.75	2.50	1.25	0.75
12"	6.50	3.75	2.00	1.00
14"	7.75	5.00	2.50	1.50
16"	11.75	6.75	3.25	1.75



SEWER SYSTEM DETAILS
BLOCKING FOR VERTICAL BENDS

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

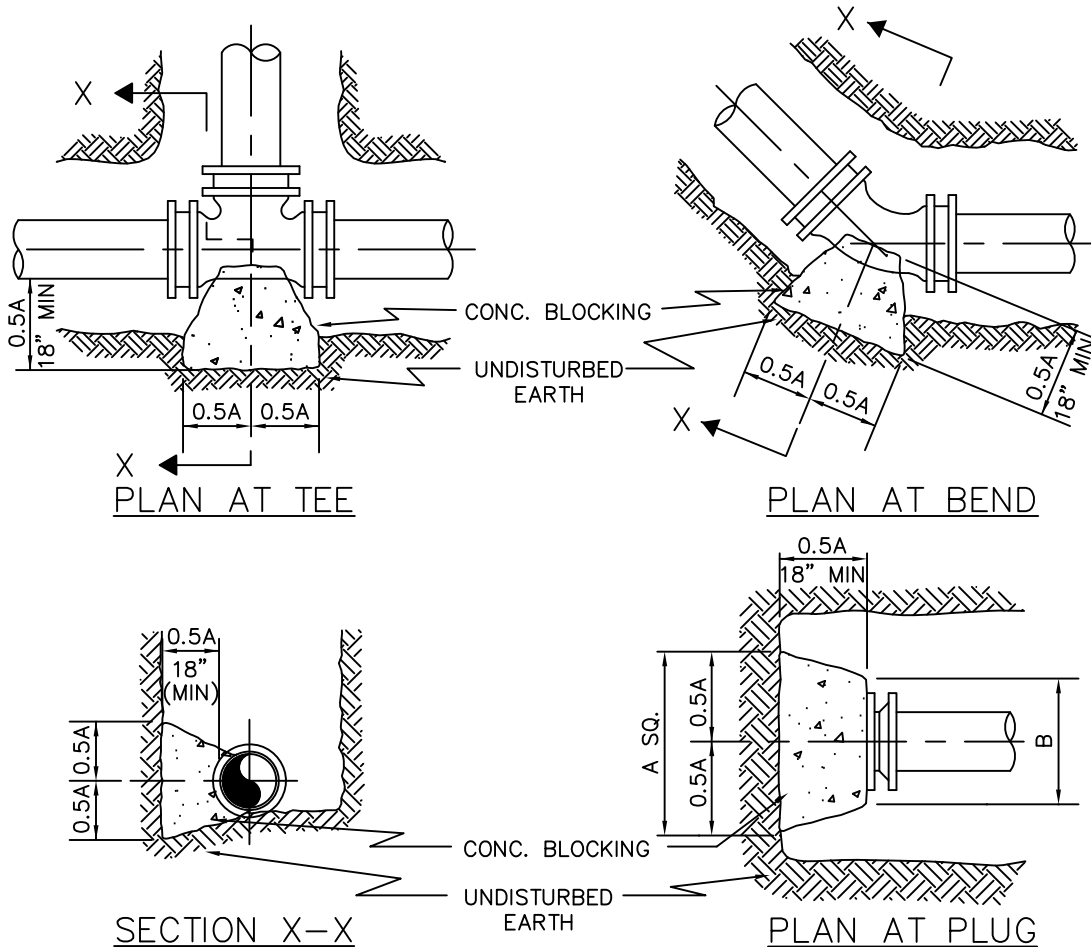
DATE: SEPT. 21, 1998

DWG. NO.: SEWER-08

NOTES

1. USE READY-MIX CONCRETE WITH 3,000 PSI STRENGTH @ 28 DAYS.
2. PLACE CONCRETE BEARING SURFACES AGAINST UNDISTURBED EARTH.
3. PLACE CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.
3. DIMINSIONS BASED ON SOIL BEARING OF 4000 P.S.I.

PIPE SIZE	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEES	PLUGS	
	A	A	A	A	A	A	B
4"	15"	12"	12"	12"	12"	12"	10"
6"	20"	16"	12"	12"	18"	18"	12"
8"	30"	20"	15"	12"	24"	24"	12"
10"	36"	26"	18"	14"	30"	30"	14"
12"	40"	32"	20"	16"	36"	36"	16"
14"	48"	36"	26"	18"	40"	40"	18"
16"	64"	42"	32"	20"	48"	48"	20"



SEWER SYSTEM DETAILS
THRUST BLOCKING

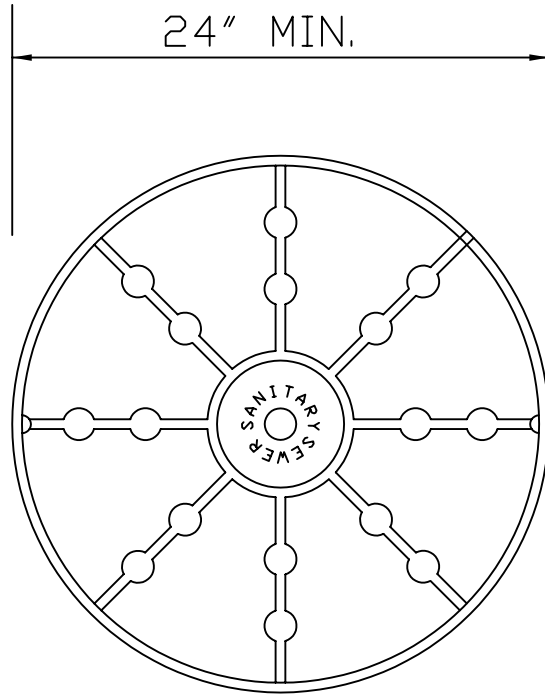
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

DATE: SEPT. 21, 1998

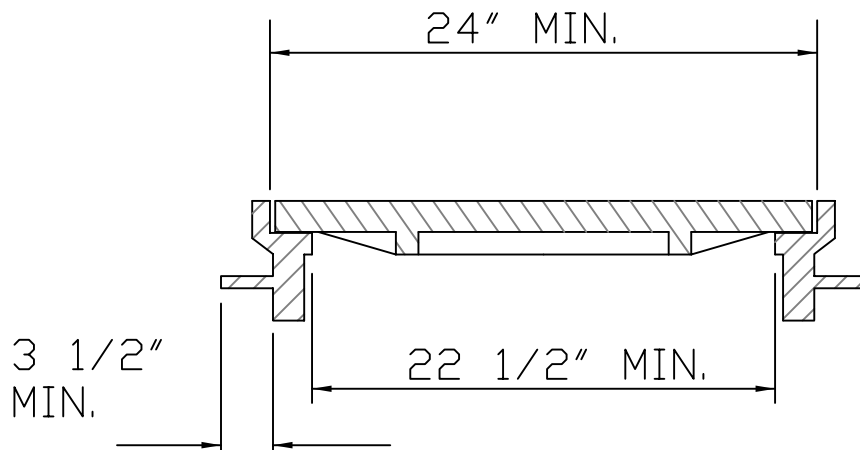
DWG. NO.: SEWER-09



COVER

NOTE:

SEE SECTION 4
PART 2 2.2 FOR
ACCEPTABLE Mfg.



FRAME

SEWER SYSTEM DETAILS
STANDARD CAST IRON FRAME & COVER

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

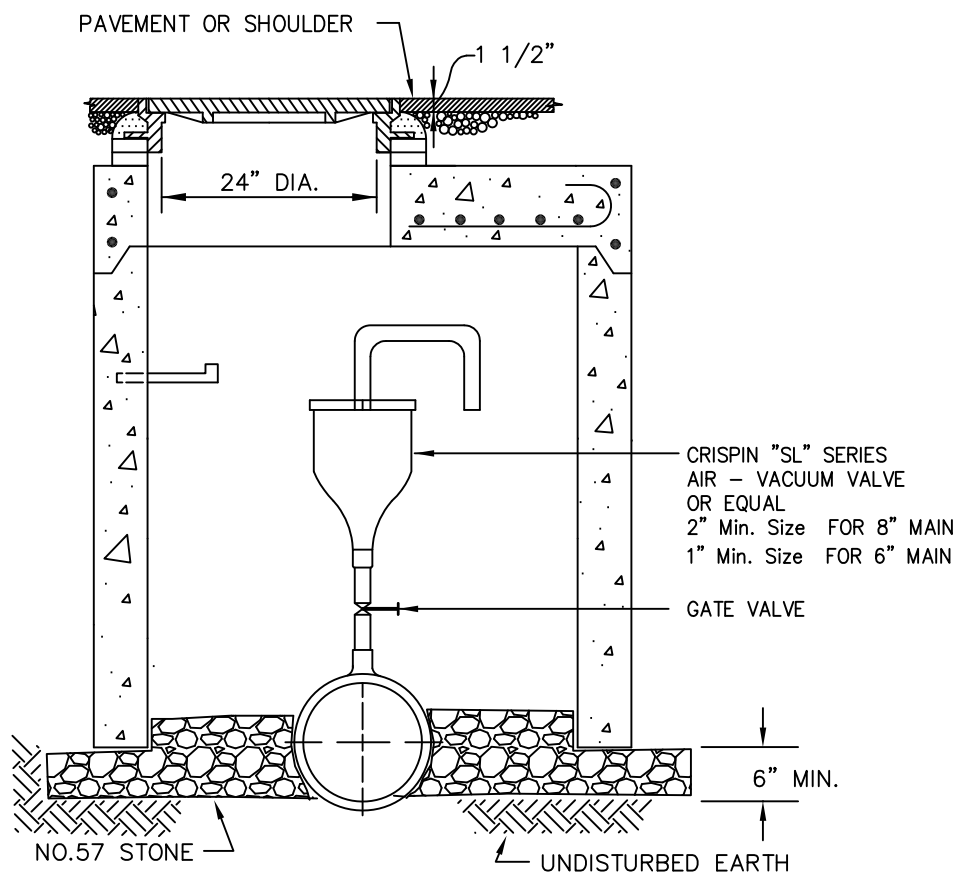
DRAWN BY: JWC

SCALE: NTS

DATE: SEPT. 21, 1998

DWG. NO.: SEWER-10

NOTE:
 MANHOLE AND FRAME AND COVER SHALL CONFORM TO
 STANDARD DETAIL FOR SHALLOW MANHOLE
 WATER METER BOXES AS PER WATER DIST. SYSTEMS, SEC.1. PART2, 2.12
 MAY BE SUBSTITUTED WITH ENGINEERS APPROVAL.



SANITARY SEWER COLLECTION SYSTEM
 AIR RELIEF VALVE
 IN SHALLOW MANHOLE

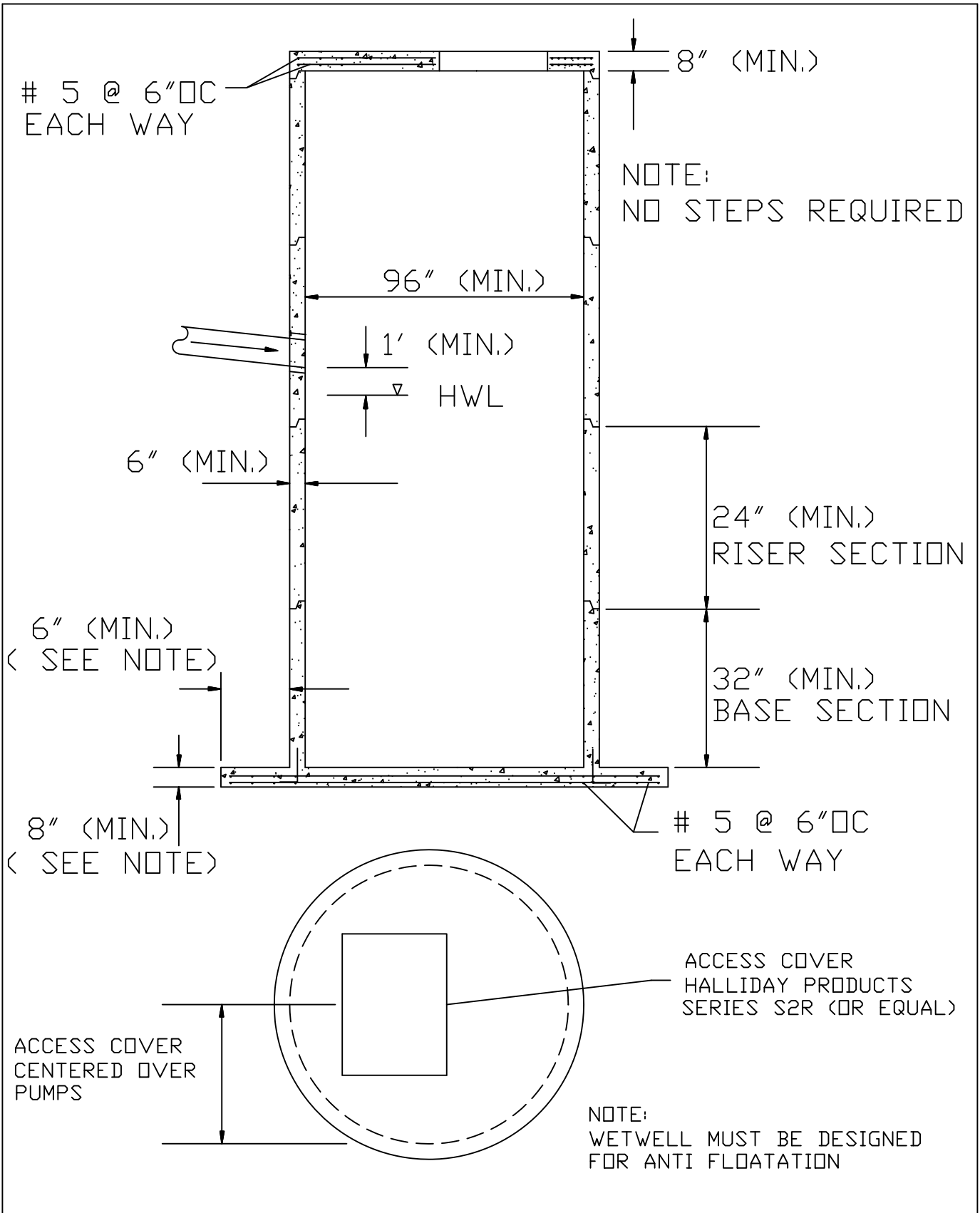
CITY OF CALHOUN
 ENGINEERING DEPARTMENT
 P.O. BOX 248
 CALHOUN, GEORGIA 30701
 TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

DATE: SEPT. 21,1998

DWG. NO.: SEWER-11



LIFT STATION WETWELL
STANDARD DETAIL
LS 1

CITY OF CALHOUN
ENGINEERING DEPARTMENT

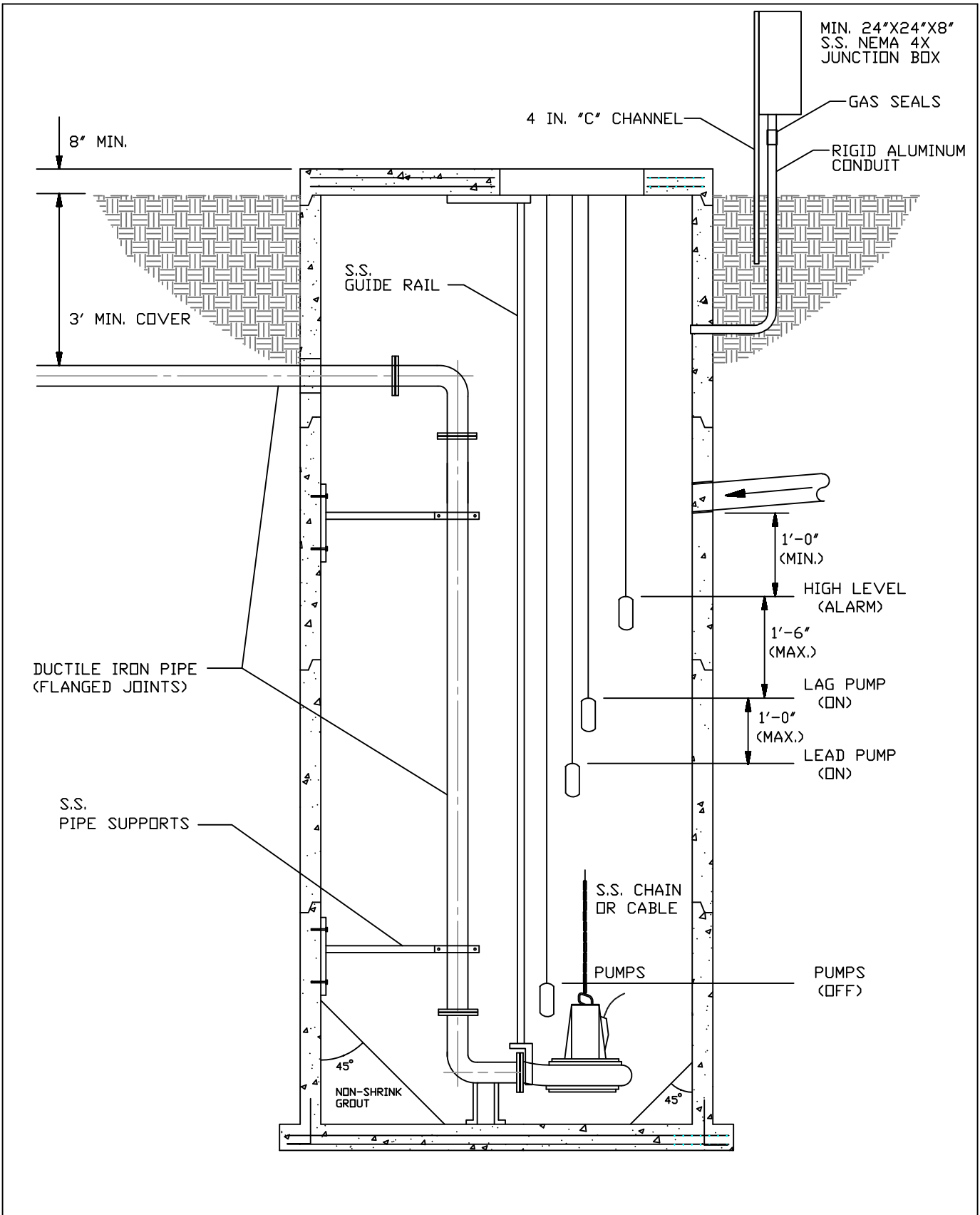
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC

SCALE: NTS

DATE: JAN.30,2001

DWG. NO.: SEWER-12

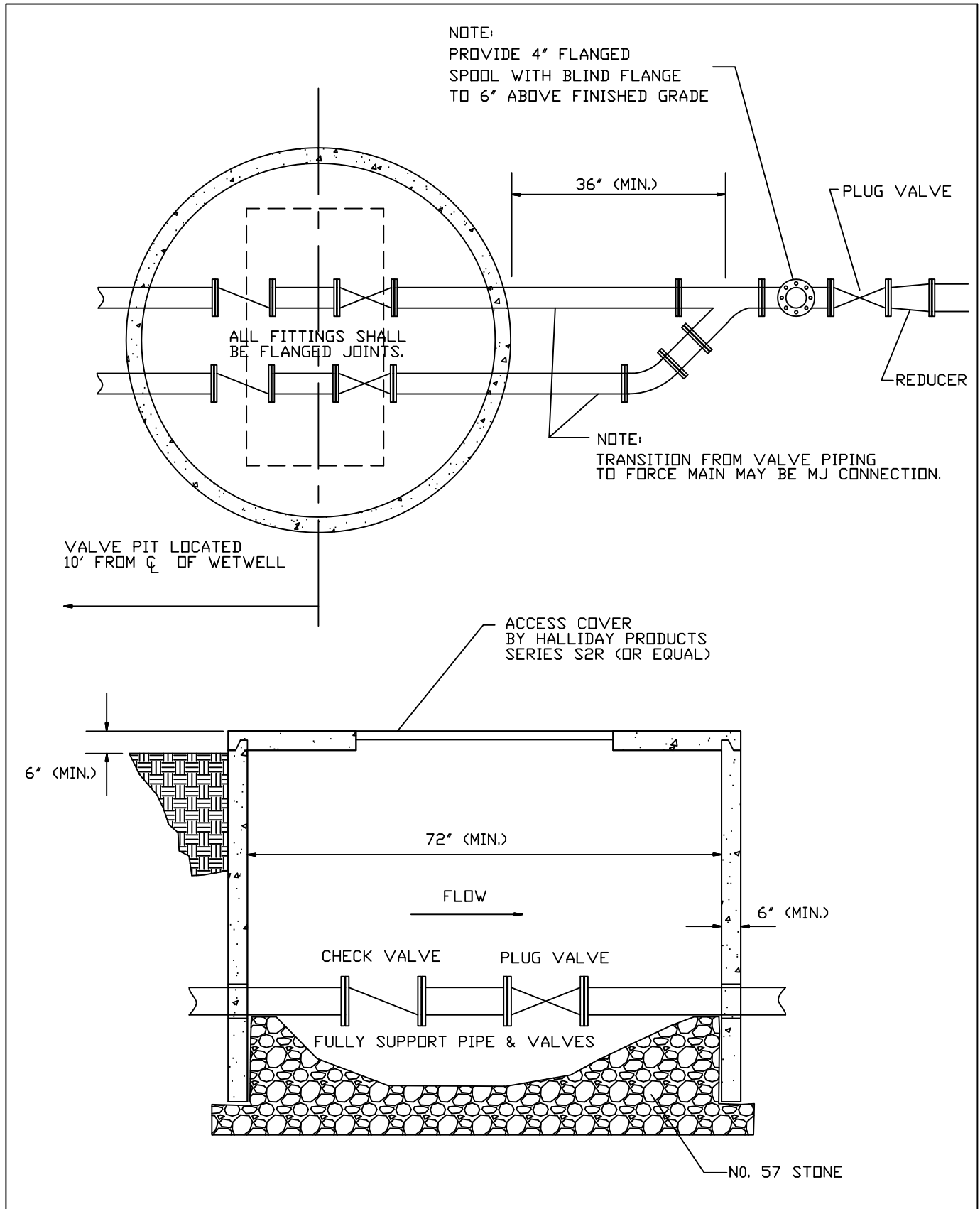


LIFT STATION WETWELL
STANDARD DETAIL
LSP 2

CITY OF CALHOUN
ENGINEERING DEPARTMENT

P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

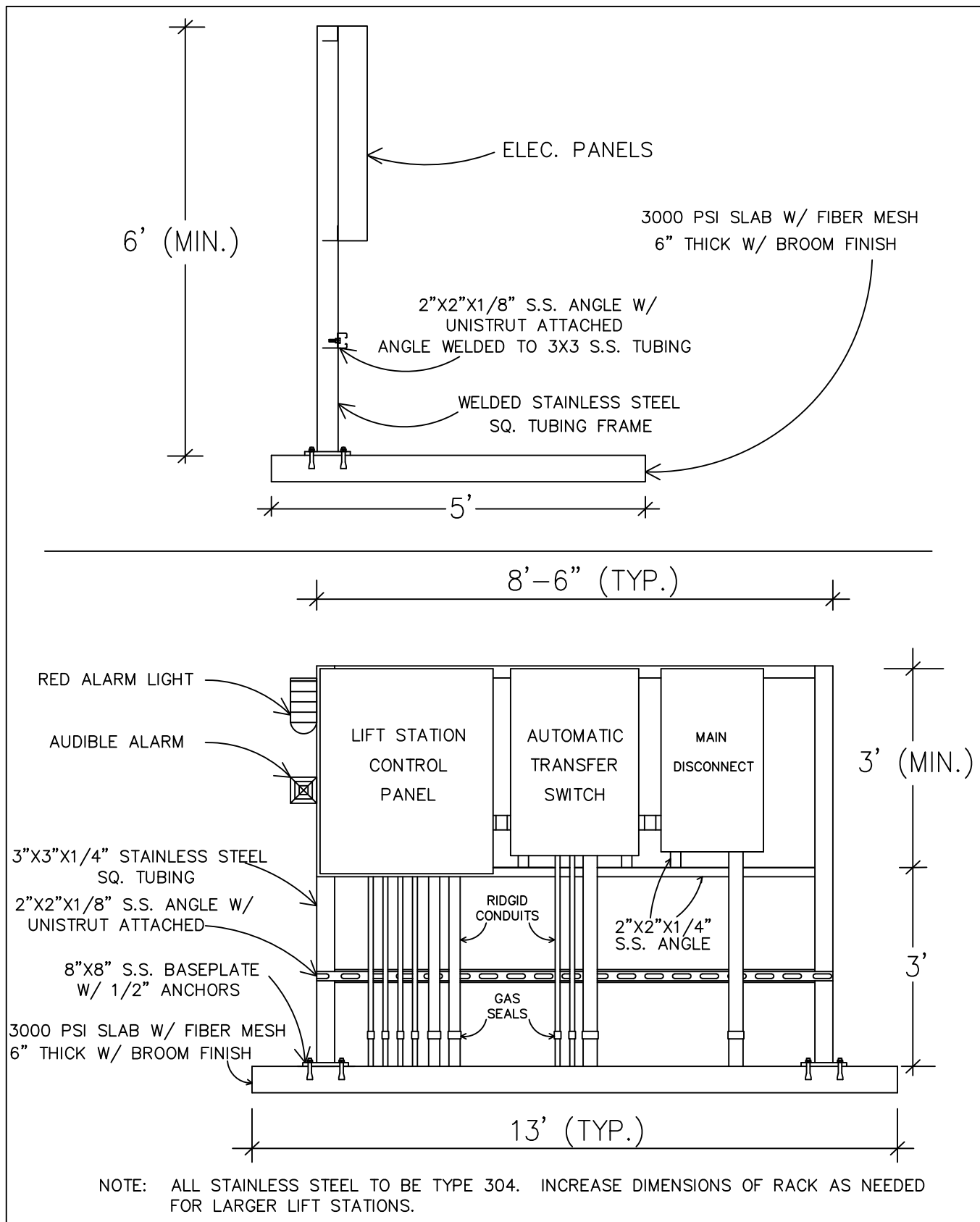
DRAWN BY: DB	SCALE: NTS	DATE: REV. 10/10/18	DWG. NO.: SEWER-13
--------------	------------	---------------------	--------------------



FORCE MAIN VALVE PIT
STANDARD DETAIL
LSVP 3

CITY OF CALHOUN
WATER & SEWER
CONSTRUCTION
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: JWC	SCALE: NTS	DATE: JAN.4, 2007	DWG. NO.: SEWER-14
---------------	------------	-------------------	--------------------



TYPICAL LIFT STATION
CONTROL PANEL

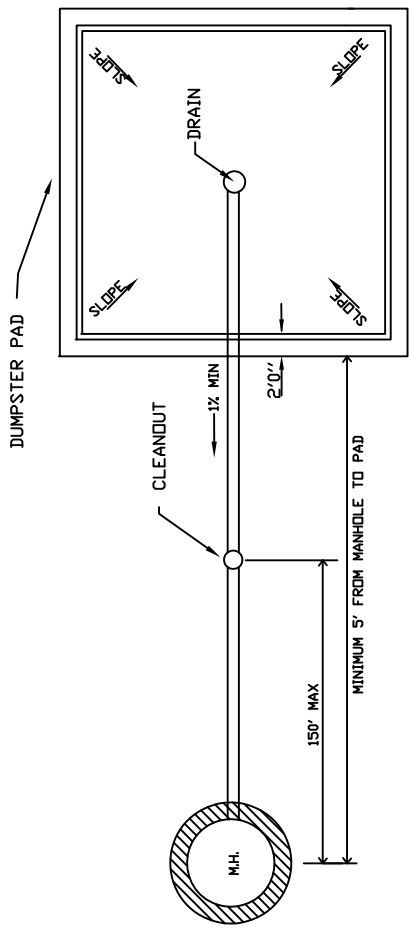
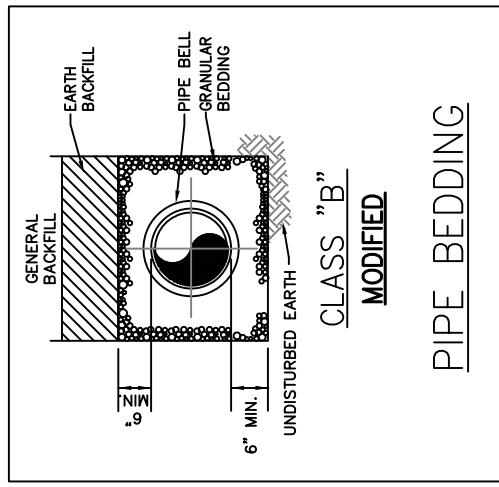
CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30703-0248
TELEPHONE (706) 629-4750

DRAWN BY: JGS

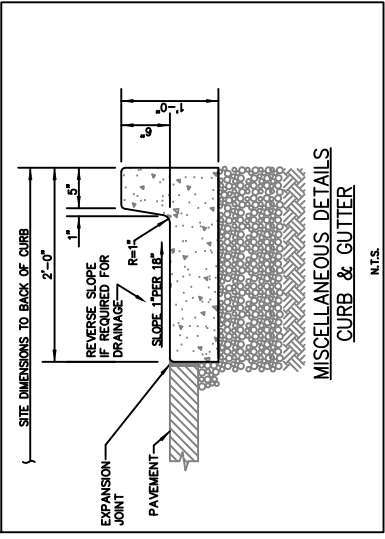
SCALE: NTS

DATE: 4-17-07

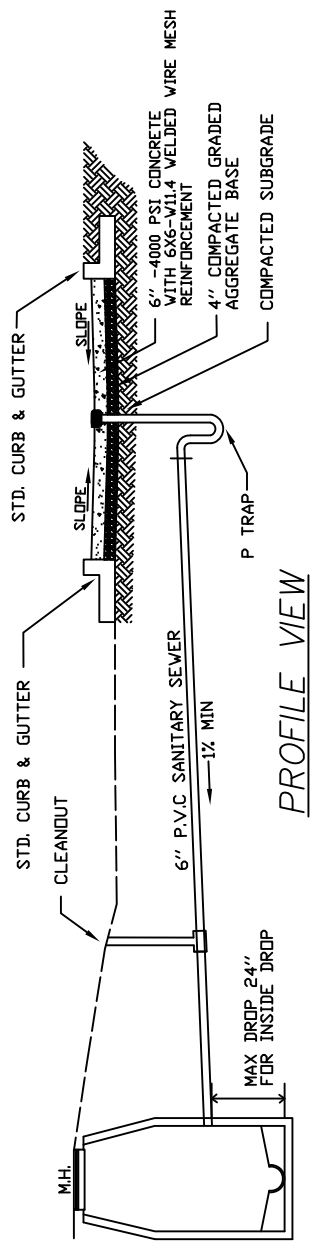
DWG. NO.: SEWER-15



*EXPANSION JOINT AT ALL CURB LINES



PLAN VIEW



PROFILE VIEW

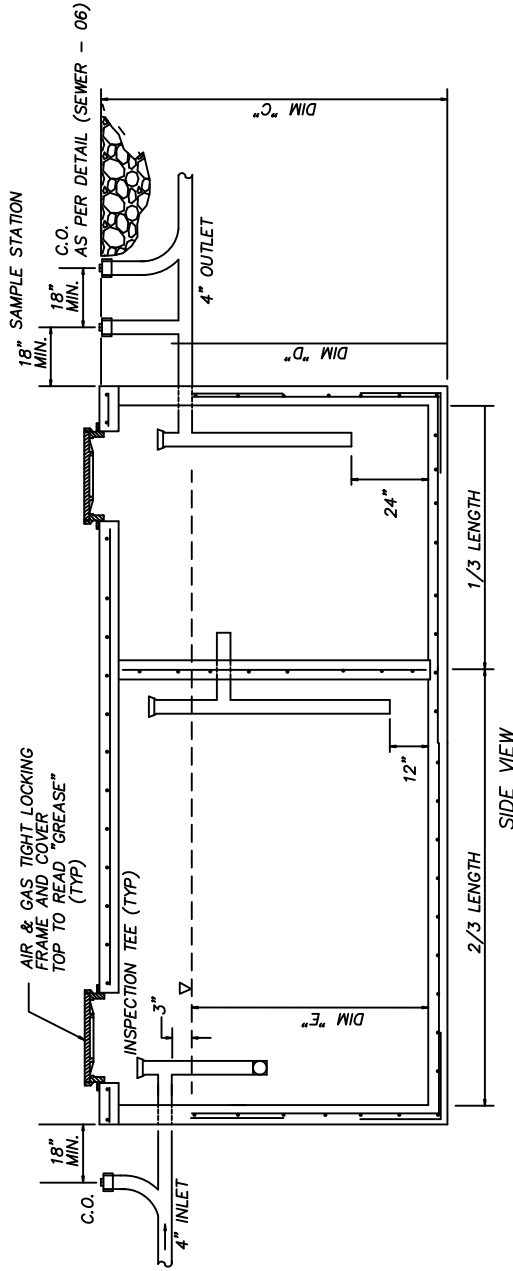
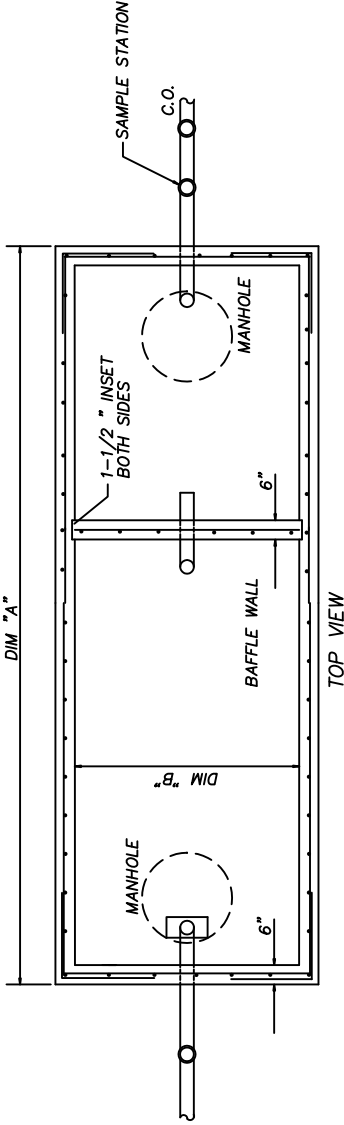
NOTES:

1. SURFACE WATER RUNOFF MUST BE SLOPED AWAY FROM PAD. DO NOT ALLOW STORM WATER RUNOFF ON PAD.
2. UNLESS OTHERWISE APPROVED, DUMPSTER DRAIN TO HAVE A DEDICATED LINE TO MANHOLE.
3. GUTTER PORTION OF STANDARD CURB & GUTTER MAY BE BACKFILLED WITH SUITABLE MATERIAL IN LANDSCAPED OR GRASSED AREAS.

DUMPSTER PAD DETAIL		CITY OF CALHOUN ENGINEERING/INSPECTION DEPARTMENT P.O. BOX 248 CALHOUN, GEORGIA 30701 TELEPHONE (706) 602-6081
DRAWN BY: KWE	SCALE: NTS	DATE: 2/10/2014
		DWG. NO.: SEWER-16

SIZING CHART

GALLON CAPACITY	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"
600	7'-0"	4'-8"	7'-0"	3'-6"	3'-2"
750	7'-0"	4'-8"	7'-0"	4'-3"	3'-11"
1000	7'-0"	5'-0"	7'-2"	4'-4"	3'-10"
1250	9'-0"	5'-0"	7'-2"	4'-2"	4'-10"
1500	9'-0"	5'-8"	7'-2"	5'-2"	4'-0"
1750	11'-2"	5'-8"	7'-2"	4'-4"	4'-7"
2000	11'-2"	6'-8"	8'-0"	4'-4"	3'-10"
2500	12'-8"	6'-8"	8'-0"	4'-7"	4'-9"
2750	12'-8"	6'-8"	8'-0"	5'-6"	5'-3"
3000	15'-7"	9'-7"	6'-6 1/2"	6'-0"	3'-9"
4000	15'-7"	9'-7"	6'-6 1/2"	6'-3"	5'-0"
5000	19'-11"	9'-11"	8'-11"	6'-2"	4'-9"



- NOTE: ALL CONCRETE SHALL BE 6" Min. THICKNESS & 4000 PSI
- REINFORCEMENT: CONCRETE SHALL BE REINFORCED W/ #4 REBAR @ 1' O.C. EACH WAY
- CORNER BARS: CORNER BARS SHALL BE #4 REBAR @ 1' O.C.
- LOADS: H-20 TRUCK WHEELS w/30 % IMPACT PER AASHTO
- GRAY WATER ONLY, BLACK WATER SHALL HAVE A SEPARATE CONNECTION
- OTHER DESIGNS BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF GEORGIA MAY BE SUBMITTED FOR REVIEW

CONSTRUCTION NOTE:
STRUCTURE MUST BE DESIGNED FOR
NON-BUOYANCY WHERE APPLICABLE

**OIL & GREASE TRAP
STANDARD DETAIL**

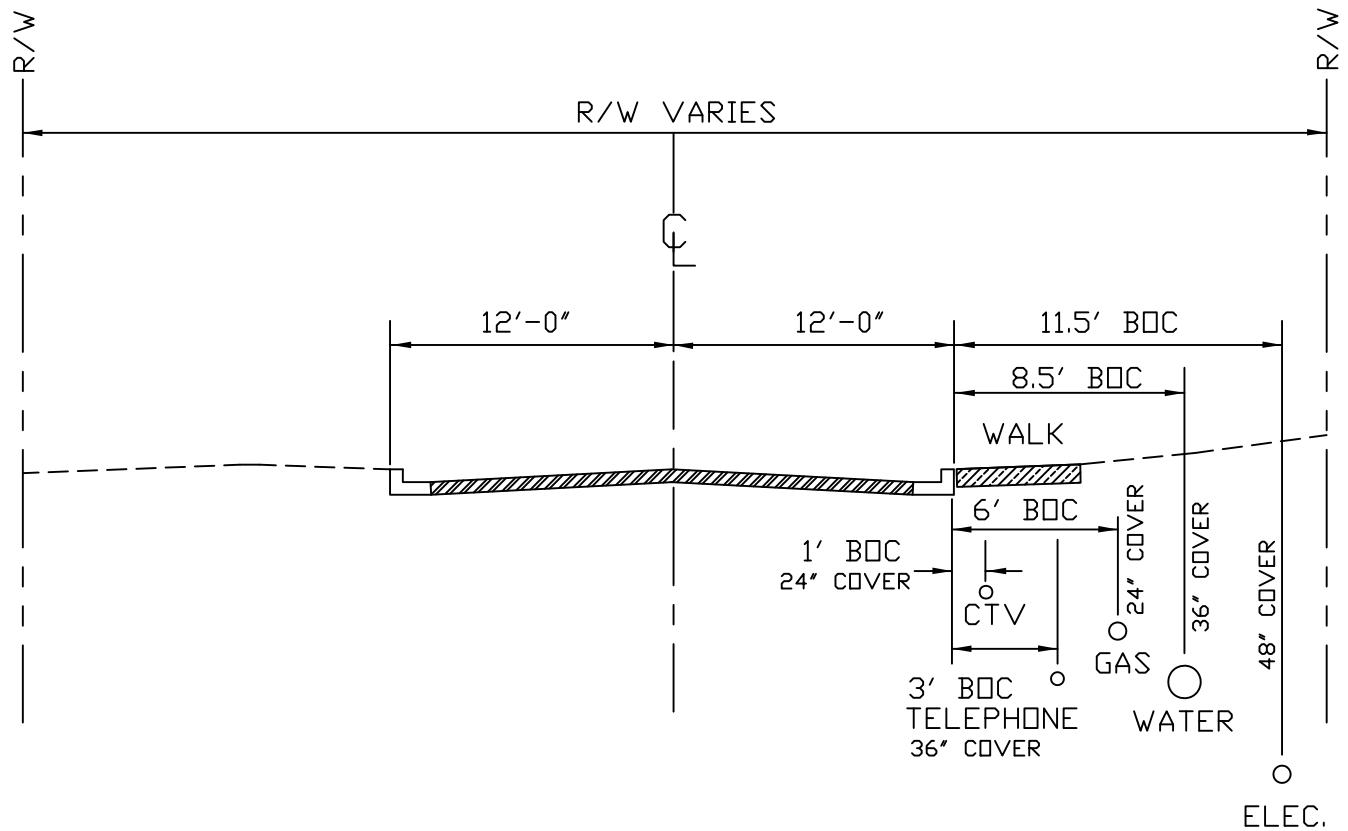
CITY OF CALHOUN
ENGINEERING/INSPECTION
DEPARTMENT
700 WEST LINE STREET
CALHOUN, GEORGIA 30701
TELEPHONE (706) 602-6081

DRAWN BY: JWC

SCALE: NTS

DATE: 10/05/12

DWG. NO.: SEWER -17



TYPICAL SECTION
FOR BOTH SIDES OF STREET

NOTE NO. 1
SANITARY SEWER LOCATION SHALL BE REVIEWED ON AN INDIVIDUAL BASIS.
WATER AND SEWER SHALL BE ON OPPOSITE SIDES OF THE STREET.

NOTE NO. 2
WATER AND SEWER SHALL NORMALLY BE INSTALLED ALONG ONE SIDE ONLY.

CITY OR COUNTY STREET
UNDERGROUND UTILITY LOCATIONS
GENERAL STANDARD DETAIL 1

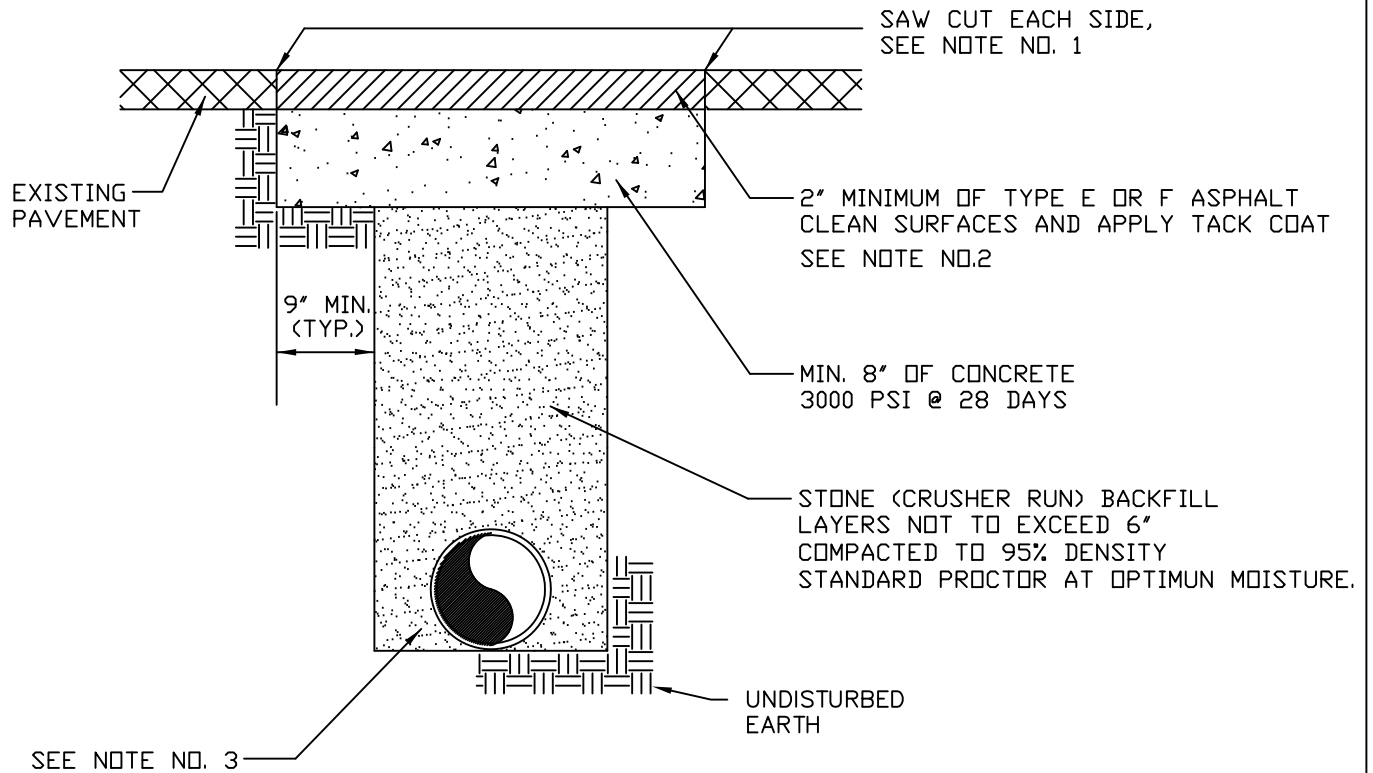
CITY OF CALHOUN
STREET DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4473

DRAWN BY: JWC

SCALE: NTS

DATE: JAN. 23, 2009

DWG. NO.: GENERAL-01



NOTE NO. 1

SAW CUTS TO FORM A NEAT LINE 9" ON EACH SIDE OF THE TRENCH OR TO VISIBLE BREAK WHICHEVER IS GREATER.

NOTE NO. 2

REMOVE AND REPLACE BASE AND PAVEMENT TO OUTER EDGE OF EXISTING PAVEMENT IF REMAINING PAVEMENT WIDTH IS 24" OR LEES.

NOTE NO. 3

SPECIAL BEDDING MAY BE REQUIRED IN AREAS WITH EXCESSIVELY WET OR YIELDING SOILS. BEDDING MAY ALSO BE REQUIRED UNDER OTHER SPECIFICATIONS.

D.O.T
PAVEMENT REPLACEMENT
GENERAL STANDARD DETAIL 2

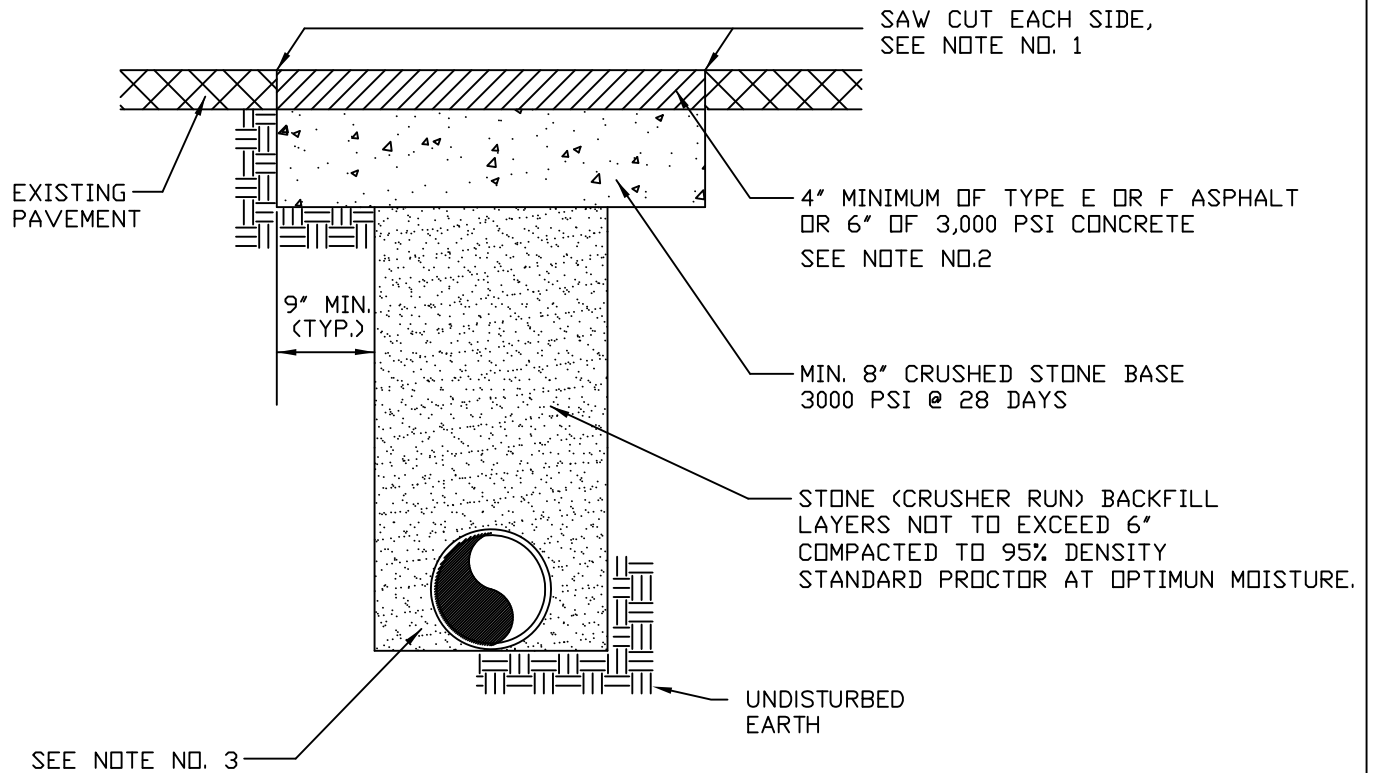
CITY OF CALHOUN
ENGINEERING DEPT.
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4750

DRAWN BY: JWC

SCALE: NTS

DATE: AUG. 12, 1998

DWG. NO.: GENERAL-2



NOTE NO. 1

SAW CUTS TO FORM A NEAT LINE 9" ON EACH SIDE
OF THE TRENCH OR TO VISIBLE BREAK WHICHEVER IS GREATER.

NOTE NO. 2

REMOVE AND REPLACE BASE AND PAVEMENT TO OUTER EDGE OF EXISTING
PAVEMENT IF REMAINING PAVEMENT WIDTH IS 24" OR LEES.

NOTE NO. 3

SPECIAL BEDDING MAY BE REQUIRED IN AREAS WITH
EXCESSIVELY WET OR YIELDING SOILS.
BEDDING MAY ALSO BE REQUIRED UNDER SPECIFICATIONS.

LOCAL ROAD & DRIVEWAY
PAVEMENT REPLACEMENT
GENERAL STANDARD DETAIL 3

CITY OF CALHOUN
ENGINEERING DEPT.
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4750

DRAWN BY: JWC

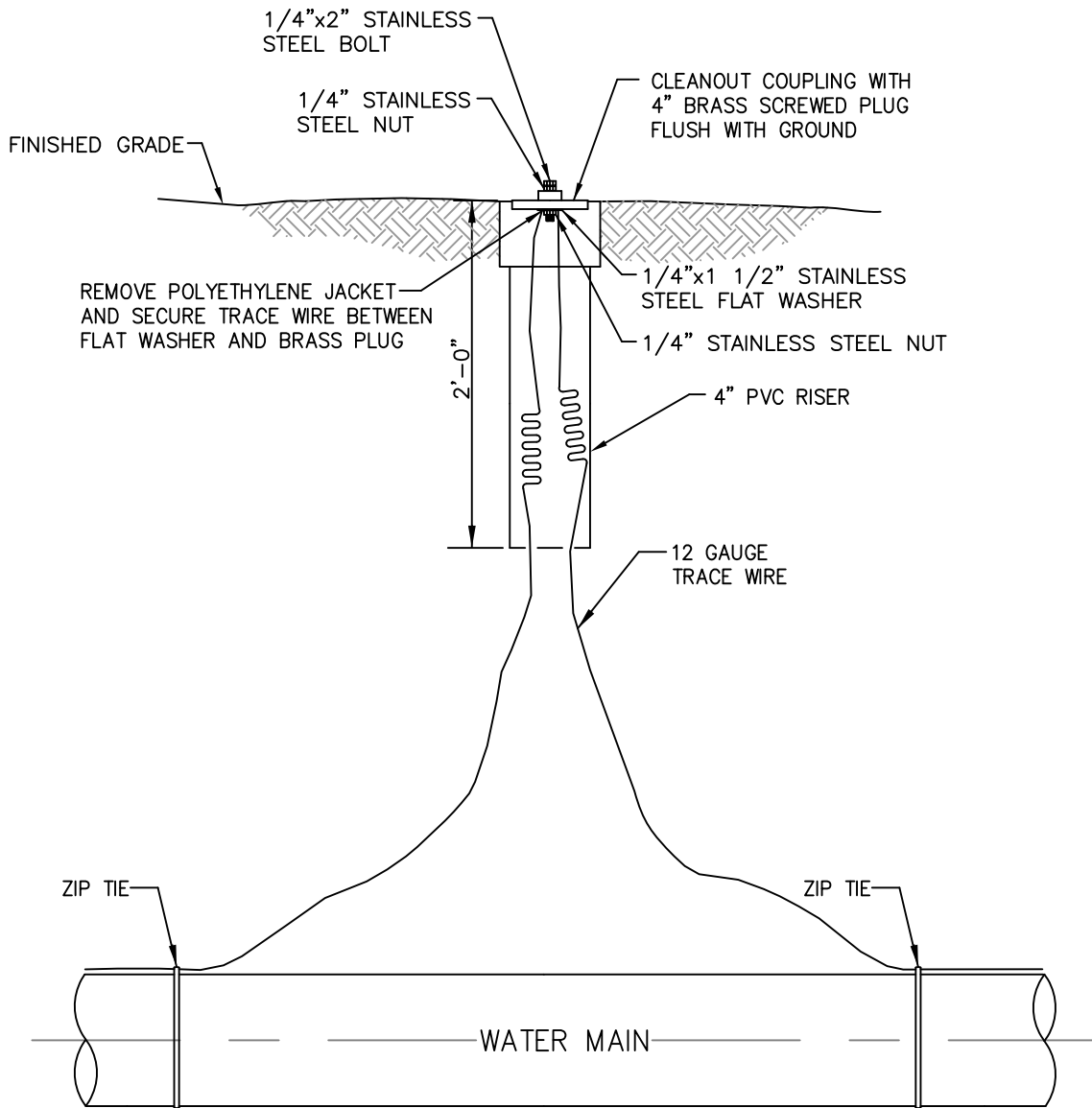
SCALE: NTS

DATE: AUG. 12,1998

DWG. NO.: GENERAL-3

NOTES:

THE CONTRACTOR SHALL PERFORM A CONTINUITY TEST ON ALL TRACE WIRE IN THE PRESENCE OF THE ENGINEER OR THE ENGINEERS' REPRESENTATIVE. INTRODUCING A SMALL ELECTRICAL CHARGE TO THE TRACING SYSTEM DURING TESTING WILL ENHANCE THE TEST RESULTS. IF THE TRACE WIRE IS FOUND TO BE NOT CONTINUOUS AFTER TESTING, THE CONTRACTOR SHALL REPAIR OR REPLACE THE FAILED SEGMENT OF THE WIRE.



TRACER WIRE
TEST STATION

CITY OF CALHOUN
ENGINEERING DEPARTMENT
P.O. BOX 248
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

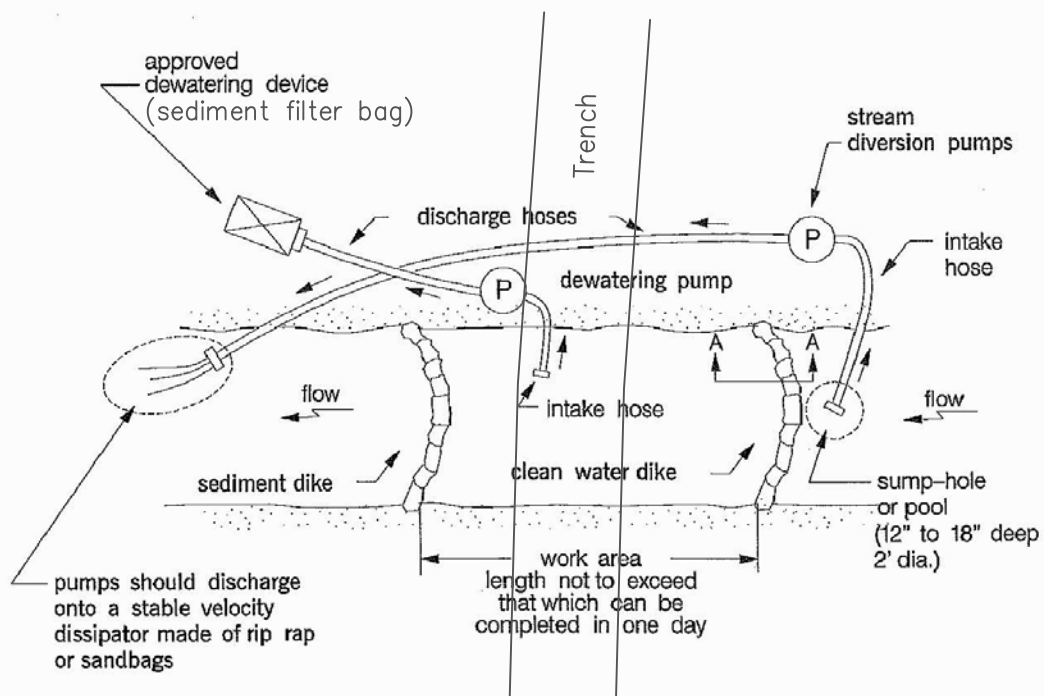
DRAWN BY: TL

SCALE: NTS

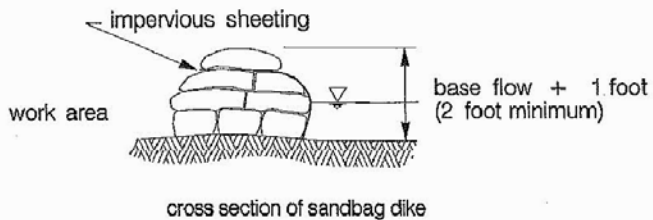
DATE: JAN. 4, 2012

DWG. NO.: GENERAL-4

PLAN VIEW



SECTION A-A



STREAM CROSSING
PUMP AROUND DETAIL

N.T.S.

**CALHOUN UTILITIES
WATER DISTRIBUTION SYSTEM CONSTRUCTION
GENERAL NOTES**

1. Failure by the City to notice any deviations from the City's Standards during the plan review process does not alleviate the Developer of the responsibility to adhere to the Standards.
2. All water distribution system construction must follow the current City of Calhoun water distribution system specifications.
3. Resilient Seat type shall conform to AWWA C509 for resilient-seated, cast iron body, bronze mounted gate valves by Mueller. All 12 inch and smaller valves shall be rated for 200 psi. All fire hydrants shall be Mueller Super Centurion A-423.
4. The Developer and/or the Developer's Contractor is responsible for verifying the exact location, size, and material of any existing water or sanitary sewer facility proposed for connection or use by this project.
5. All water service sleeves must be a minimum of two inches in diameter.
6. The Developer shall notify the water system inspector 48 hours before beginning construction.
7. A copy of the approved construction plans must be kept on the job site at all times that construction is underway.
8. The Developer's contractor is responsible for recording accurate locations of all pipelines, fittings, valves, and other appurtenances on "as-built" markup drawings.
9. In areas to be paved, completely backfill trench - to the surface - with compacted crusher-run stone.
10. Residential water booster pumps may be required for locations above elevation 700 feet above MSL in areas where low side pressures exist. Residential water booster pumps may be required for locations above elevation 850 feet above MSL in areas where high side pressures exist.
11. Where practical, maintain a minimum vertical separation of 18 inches between the water main and all structures and other utilities
12. Provide a minimum of 36 inches of cover measured from the finished grade to the top of the pipe barrel.
13. Only City forces are allowed to make connections to the existing system.
14. All water pipeline, with diameters of 4" or greater shall be Ductile Iron Pipe pressure class 350.

WATER DISTRIBUTION SYSTEM
GENERAL CONSTRUCTION NOTES

CITY OF CALHOUN
ENGINEERING DEPARTMENT
700 W. LINE STREET
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: DB

SCALE: NTS

DATE: JAN. 4, 2012

DWG. NO.: GENERAL-5

**CALHOUN UTILITIES
SANITARY SEWER SYSTEM CONSTRUCTION
GENERAL NOTES**

1. All sanitary sewer system construction must follow the current City of Calhoun sanitary sewer system specifications.
2. D.I.P. sewer lines shall have a cement-mortar interior lining and a Class 50 minimum wall thickness.
3. All Polyvinyl Chloride (PVC) sewers shall meet the requirements for minimum wall thickness as specified under SDR 26 in ASTM D3034, latest revision. PVC is not allowed for sewers greater than 12" in diameter or installed at a depth greater than 15'.
4. Ductile Iron Pipe is required for sanitary sewer lines:
 - Under all stream crossings
 - With 12% or greater slope
 - At all drop manholes
 - Inside casings
 - With less than 3' of cover or over 15' of cover
 - At all other locations specified by the City
5. Information regarding underground utilities on these plans is not guaranteed as to accuracy or completeness. Prior to beginning work, the Contractor shall request a field location through the utilities protection center and any utility owners thought to have facilities in the area. The Contractor shall promptly compare these field-marked locations with the project plans and then notify the designer of any anticipated problems or need for design changes. It is the Contractor's responsibility to excavate or cause the utility owner to excavate for the purpose of determining exact elevations or locations at utility crossings and other critical locations well in advance of the work under this contract. Damage to existing utilities resulting from the Contractor's negligence shall be repaired at the Contractor's expense. The Developer and/or the Developer's Contractor is responsible for verifying the exact location, size, and material of any existing water or sanitary sewer facility proposed for connection or use by this project.
6. All sewer service laterals shall be 4" or 6" in diameter. The minimum grade for 4" services is 2% and the minimum grade for 6" services is 1%.
7. The Developer shall notify the sewer system inspector 48 hours before beginning construction.
8. The Developer is: (name, address, and telephone number).
9. The 24-Hour local contact is (name and 24 hour telephone numbers).
10. This project consists of: (Describe sanitary sewer work to be done, including length of pipe and sizes and number of manholes.).
11. This property (is / is not) located within a 100 year flood plain as shown on F.I.R.M. Community Panel Number _____, dated _____.
12. An undisturbed vegetative buffer meeting local and state requirements adjacent to all running streams and creeks will be left and maintained.
13. A copy of the **approved** construction plans must be kept on the job site at all times that construction is underway.
14. The Developer's contractor is responsible for recording accurate locations of all pipelines, fittings, valves, and other appurtenances on "as-built" markup drawings.
15. In areas to be paved, completely backfill trench - to the surface - with compacted crusher-run stone.

SANITARY SEWER SYSTEM
GENERAL CONSTRUCTION NOTES

CITY OF CALHOUN
ENGINEERING DEPARTMENT
700 W. LINE STREET
CALHOUN, GEORGIA 30701
TELEPHONE (706) 629-4701

DRAWN BY: DB

SCALE: NTS

DATE: JAN. 4, 2012

DWG. NO.: GENERAL-6

STATE OF GEORGIA
COUNTY OF GORDON

FOR AND IN CONSIDERATION of the sum of Ten and No Hundredths (\$10.00) Dollars, and other valuable consideration, as described herein; the undersigned hereby grants and conveys to the CITY OF CALHOUN, a municipal corporation of the State of Georgia, its successors and assigns, the free, permanent and uninterrupted easement, use, liberty and privilege of a right of way twenty (20) feet in width, under and through the property of the undersigned located in Land Lot ___ in the ___th District and ___rd Section of Gordon County, Georgia as more particularly described in the attached plat marked Exhibit "A"; for the purpose of a utility easement for laying, maintaining and operating utility lines (including all appurtenant structures) as a part of the utility system of said City. For the consideration aforesaid the undersigned hereby agrees that said City may maintain said utility in, on, under and through the said property and said utility may be of such size and may be determined at such depth as may be determined by the City of Calhoun. The undersigned expressly agrees that the said City shall have a temporary construction easement of such minimum working width (not exceeding 50 feet) as is reasonably necessary for the proper installation of said utility. The undersigned further agrees not to construct any structure or building within the limits of said twenty (20) feet permanent easement and that said City, its successors and assigns shall have the right to operate and maintain said utility in and through said property and the easement and right of way granted, together with the right of ingress and egress to and from the same to the extent necessary to install, repair, keep up, replace, maintain and operate said utility.

The City of Calhoun shall, as soon as reasonably practical, replace the land where the utility or pipe is placed back in the same condition as existed before its installation.

The City of Calhoun shall not be liable for, or bound by any statement, agreement or understanding not expressed herein.

The undersigned does not convey any land, but merely grants the rights, privileges and easements hereinbefore set out.

IN WITNESS WHEREOF, the undersigned has set hand affixed seal this _____ day of _____, 20__.

OWNER: _____

BY: _____

TITLE: _____(SEAL)

Signed, sealed and delivered

in the presence of:

WITNESS

NOTARY PUBLIC,
GEORGIA STATE AT LARGE

MY COMM. EXPIRES: _____

IRREVOCABLE LETTER OF CREDIT

Date: _____

Issuer: _____

Customer: _____

Beneficiary: City of Calhoun Georgia
(Calhoun Utilities)
700 West Line Street
Calhoun, GA 30701

Please check **one**: Construction Period; Warranty Period

For the account of our Customer, we the Issuer hereby issue and establish this ***Irrevocable Letter of Credit*** in your favor for an amount(s) not exceeding \$ _____ U.S. Dollars in the aggregate (the "Credit Amount"). These funds shall be available upon your presentation of drafts drawn on us at sight, accompanied by any written certificates or documents indicated below.

Presentation of such drafts shall be made during regular business hours, on or prior to (the Expiration Date as defined herein)) hereof, at our office located at the Issuer address or at such other address as we may specify in written notice to you (the "Presentment Address"). Drafts drawn and presented hereunder and in compliance with the terms and conditions hereof will be duly honored by us with our own funds.

1. DRAWINGS:

Partial drawings of funds hereunder are: *Permitted* ***OR*** *Not permitted*. If permitted, partial drawings made and honored shall correspondingly reduce (and shall not in the aggregate exceed) the Credit Amount stated above.

Each draft must specify its dollar amount and state on its face that it is "***Drawn under _____ IRREVOCABLE LETTER OF CREDIT NO. _____ DATED _____.***" Each draft must be accompanied by any additional documentation specified below, all duly executed and in form and content satisfactory to us.

the case of a final drawing that extinguishes the Credit Amount or any remaining balance thereof, the draft must be accompanied by the original of the ***Letter of Credit***. (In the case of drafts for permitted partial drawings prior to said final drawing, each such draft must be need not be accompanied by this ***Letter of Credit***.)

The following additional documentation must be delivered to us at the Presentment Address contemporaneously with each draft presented by you:

2. EXPIRATION DATE

- A. If this **Letter of Credit** is for the Construction Period it shall expire on the earlier of (a) our close of business on _____, or (b) the day on which the Credit Amount is reduced to zero by drawings hereon made and honored. Upon such expiration, we shall be fully discharged of all obligations hereunder and you shall surrender this **Letter of Credit** to us for cancellation.
- B. If this **Letter of Credit** is for the Warranty period it shall expire on the later of (a) one (1) year from the date of your acceptance of all completed construction by Customer or (b) your acceptance of all completed construction and repairs to said construction by Customer. As a requirement for acceptance under either (a) or (b) herein the Customer shall have scheduled and performed with you an end-of-warranty inspection of the completed construction, including all installed facilities and utilities, and complete or repair any deficiencies found by you during said end-of-warranty inspection. Upon the completion and repair of said deficiencies and the execution and delivery of a quit-claim deed to all installed facilities (to include, but not limited to all pipe, conduit, manholes, valves, meters and related materials) from Customer to you, this **Letter of Credit** will be surrendered and returned by you to us. This **Letter of Credit** shall not be released by you if the Customer fails to schedule and perform an end-of-warranty inspection or correct found deficiencies.

3. TRANSFERABILITY

This **Letter of Credit** is non-transferable, and no valid transfer or assignment hereof shall be authorized or permitted.

This **Letter of Credit** may be transferred in its entirety, but not in part, upon your delivering to us your prior written notice of the intended transfer and payment of our transfer fee. In the event of such transfer, and at all times after the date thereof, (a) the transferee shall be deemed the sole Beneficiary for all purposes hereof and, we shall have no further obligation or responsibility to you (as the original Beneficiary) hereunder; and (b) the words "you" and "your" wherever used herein, shall mean and refer to the transferee.

4. COMPLIANCE

You alone shall be responsible for the correctness of the amount and timeliness of each drawing, for the proper application and disbursements of the amounts drawn hereunder, and for your compliance with the provisions hereof. Neither you nor any other person shall have any recourse against us for any amount paid by us in good faith hereunder pursuant to any draft or documentation which fully complies with the terms hereof, or which on its face appears otherwise in order but proves to be erroneous, forged, fraudulent, invalid or insufficient in any respect, in the absence of gross negligence or willful misconduct on our part. Under no circumstances shall we be held responsible for any impossibility or difficulty in your achieving strict compliance with the requirements hereof precisely as stated herein.

5. DISHONOR

We reserve the right to dishonor any draft which does not strictly comply with the requirements hereof. In no event shall we be precluded from relying upon any reason for dishonor of a draft given by us in a communication received by you (or by the

presenter of the draft) within a reasonable time not exceeded seven (7) business days after the draft and all required accompaniments are presented to and received by us (the "Seven-Day Period"). We shall be entitled to rely upon any such reason without regard to either (a) the timing of any presentment made before the Expiration Date, or (by the timing during the Seven-Day Period of any preliminary communication(s) from us concerning any dishonor decision or reason for dishonor. For any such reason so given by us within the Seven-Day Period, we shall conclusively be deemed to have met the timing requirements imposed by the *International Standby Practices* published by the International Chamber of Commerce (the "ISP98").

The Expiration Date shall not be extended to accommodate a presentment made less than seven (7) Business Days prior to the Expiration Date and you shall not be entitled to submit a draft or any documents in support of a drawing after the Expiration Date. In no event shall we be required to communicate a dishonor decision or our reasons for such decision prior to or at any time less than the Seven-Day Period.

6. **APPLICABLE LAW: JURISDICTION**

This **Letter of Credit** is subject to **ISP98**, which is made a part hereof by this reference; and to the extent not inconsistent with **ISP98**, this **Letter of Credit** shall be governed by and construed in accordance with the laws of the State of Georgia, U.S.A.

For purposes of any litigation which might arise hereunder, your acceptance of this **Letter of Credit** shall constitute our consent to the jurisdiction and venue of any court of competent jurisdiction in Gordon County, Georgia, and your agreement to institute no such litigation elsewhere.

7. **RECORD RETENTION**

Customer acknowledges and agrees that Issuer may from time to time retain information about Customer and documents Customer signs, including, but not limited to, this **Letter of Credit** and documents related to this **Letter of Credit** (collectively, the "documents") electronically (such as in optical, digital or other electronic storage and retrieval system) and destroy the original documents. Issuer and Customer agree and intend that any copy of any document produced by Issuer from the electronic media shall have the same legal force and effect as the original documents for all purposes and in all circumstances, including, but not limited to, collection, admissibility, authentication, or any other legal purpose.

8. **MISCELLANEOUS**

The pronouns "we", "us", "our" whenever used herein shall mean and refer to the Issuer. The pronouns "you" and "your" wherever used herein shall mean the City of Calhoun, Georgia (Calhoun Utilities).

If by mistake or inadvertence, or for any other reason, any funds in excess of the Credit Amount at the time available are paid by us and received by you, you shall promptly refund the full amount of such excess to us.

None of the provisions of the **Letter of Credit** shall be deemed waived by any failure on our part to require strict compliance therewith.

If and in the event that any provision hereof is adjudged invalid or unenforceable by any court or governmental agency having jurisdiction in the matter, and notwithstanding any

provisions hereof to the contrary, this **Letter of Credit** shall be deemed null and void ab initio and both of us shall be restored to our respective formerly occupied conditions as though this **Letter of Credit** were never issued.

Yours very truly,

(Name of Issuer)

By: _____

Title: _____

By: _____

Title: _____