

FAYETTEVILLE PUBLIC WORKS COMMISSION

LEGION HILLS OUTFALL AND
NEW PINEWOOD DRIVE LIFT STATION

JULY 2017

BY
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NOTICE TO BIDDERS
LEGION ROAD OUTFALL AND NEW PINWOOD DRIVE LIFT STATION

Fayetteville, NC
FOR
FAYETTEVILLE PUBLIC WORKS COMMISSION

Cumberland County
North Carolina

Pursuant to Section 143-129 of the General Statutes of North Carolina, sealed proposals are solicited and will be received in the Fayetteville Public Works Commission, Main Meeting Room #2, 1st Floor, Fayetteville Public Works Commission Operations Center, 955 Old Wilmington Road, Fayetteville, NC 28301, ATTN: Gloria Wrench before 2:00 p.m. on Tuesday, September 26, 2017 and then publicly opened and read for Construction of the proposed sanitary sewer system improvements Contract #1 to consist of approximately 352 lf of 8" sanitary sewer, 10,160 lf of 12" sanitary sewer, 506 lf of 30" steel casing, 60 manholes, grout fill 1,043 lf of 8" sanitary sewer and demo 2 lift stations. Contract #2 to consist of approximately 1 manhole, 74' of 12" sanitary sewer, 3,579 lf of 12" force main, 59 lf of 24" steel casing, demo 1 lift station and construct Duplex Submersible lift station. Contract #3 Alternate Bid pipe bursting and gravity sanitary sewer to consist of pipe bursting 1,845 lf of 8" sanitary sewer to 12" in lieu of a portion of Contract #1 Gravity Sewer remove 66 lf of 8" sanitary sewer, construct 319 lf of 8" sanitary sewer and 8,150 lf of 12" sanitary sewer, bore and jack 506 lf of steel casing, fill 257 lf of 8" sanitary sewer with grout, remove 13 manholes, install 59 manholes, demo lift station, convert lift station to manhole. All Contracts shall include clearing, grubbing, erosion control, seed, sod, restoration, traffic control, demolition and all incidentals necessary to complete the work.

Proposals must be enclosed in a sealed envelope addressed to Fayetteville Public Works Commission, Fayetteville, North Carolina 28301. The outside of the envelope must be marked SEALED BID: LEGION ROAD OUTFALL AND NEW PINWOOD DRIVE LIFT STATION and shall indicate the name, address and state license number of the bidder. The outside of the envelope shall also be marked to indicate the contract being bid as follows:

Bid Summary:

Contract #1 Gravity Sanitary Sewer Outfall
Contract #2 Lift Station and Force Main
Contract #3 Alternate Bid Pipe Bursting & Gravity Sanitary Sewer Outfall

Proposals must be submitted on the printed form, or exact copies thereof, contained in the Contract Documents.

A mandatory pre-bid conference will be held in the Fayetteville Public Works Commission Main Meeting Room #2, 1st Floor, PWC Operations Center, 955 Old Wilmington Road, Fayetteville, North Carolina, 28301 at 10:00 a.m. on Monday, August 28, 2017. Questions will be fielded at the pre-bid conference and all prospective bidders shall attend the conference. All questions due by 5:00 pm on Friday, September 8, 2017 Individual telephone inquiries are prohibited. The PWC assumes no responsibility to fully inform absentees of clarifications not issued by addendum.

Each proposal shall be accompanied by a cash deposit or certified check drawn on a bank or trust company insured by Federal Deposit Insurance Corporation, payable to Fayetteville Public Works Commission of an amount equal to not less than five (5) percent of the proposal or in lieu thereof a bidder may offer a bid bond of five percent 5 percent of the bid executed by a surety company licensed under the laws of North Carolina to execute the contract in accordance with the bid bond and upon failure to forthwith make payment, the surety shall pay the obligee an amount equal to the amount of said bond. Said deposit shall be retained by the Owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten days after the award or give satisfactory surety as required by law.

Performance and Payment Bonds are required in the amount of 100% of the contract amount and shall be furnished by the Contractor.

All Contractors are notified that North Carolina Statutory provisions as to licensing of Contractors will be observed in receiving, reading and awarding the Contracts. (Chapter 87 of the North Carolina Statutes)

The License Classification shall be:

Public Utilities (Water Lines and Sewer Lines)	-	Unlimited
Unclassified	-	Unlimited

Plans and specifications, including Contract Documents, are open to public inspection in the offices of the PWC Purchasing Department, 1st floor, PWC Administration Building, 955 Old Wilmington Road, Fayetteville, North Carolina 28301 and the ISQFT website at www.ISQFT.com. Plans and specifications including Contract Documents will be available on request on or about **Tuesday, August 22, 2017** from the Design Engineer, Moorman, Kizer & Reitzel, Inc., 115 Broadfoot Avenue, Fayetteville, North Carolina, 28305, phone: (910) 483-5191, (910) 484-0388 (fax). Contractors must submit a **\$200.00** deposit which will be fully refunded to all Contractors submitting a bona-fide proposal provided plans and specifications are returned in good condition within five (5) days after the date set for receiving bids. Contractors who do not submit a bid or equipment and material suppliers returning the plans and specifications in usable condition will be refunded one-half of their deposit. Checks for plan deposits are to be made payable to Moorman, Kizer & Reitzel, Inc.

Fayetteville Public Works Commission and the City of Fayetteville reserve the right to reject any or all proposals waive all informalities concerning bid, or award bid to the lowest responsible bidder or bidders, taking into consideration quality, performance, and the time specified in the proposals for the performance of the contract.

The bidder to whom the contract may be awarded must comply fully with the requirements of North Carolina General Statutes, Section 143-129, as amended.

No bids may be withdrawn after the scheduled closing time for the receipt of proposals for a period of ninety (90) days.

FAYETTEVILLE PUBLIC WORKS COMMISSION

Gloria B. Wrench
Procurement Manager

**DIVISION I
GENERAL REQUIREMENTS**

00100 – INSTRUCTIONS TO BIDDERS

A. Defined Terms

Terms used in these Instructions to Bidders are defined in 00600 Definitions and Terminology section of these Contract Documents. The term "Successful Bidder" means the lowest, qualified, responsive and responsible Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award.

B. General

Sealed Bids, in accordance with the Bidding Documents, will be received in person or via special courier service or U.S. Postal Service, at the offices of Purchasing Department, 1st Floor, Public Works Commission Administration Building, 955 Old Wilmington Road, Fayetteville, North Carolina, 28301, no later than the time and date specified in the Invitation to Bid.

1. In the solicitation or awarding of contracts, the Owner shall not discriminate because of the race, religion, color, sex, age, disability or national origin of the Bidder.
2. The Owner welcomes and encourages the participation of minority-owned businesses (See Appendix) in procurement transactions made by the Owner.

C. Copies of Bidding Documents

1. Complete sets of Bidding Documents and Supplementary Project Information in the number and for the sum as stated in the Invitation to Bid, may be obtained from the Design Engineer.
2. Complete sets of Bidding Documents shall be used in preparing Bids. Neither Owner nor Design Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
3. The Owner and Design Engineer, in making available copies of Bidding Documents do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

D. Contractor's License

1. No General Contractor shall engage in contracting work in the State of North Carolina unless it has been licensed under the provisions of the North Carolina Statutes.
2. Bidders are prohibited from contracting for, or bidding upon, the construction, removal, repair or improvements to or upon real property owned, controlled or leased by the City of Fayetteville without a North Carolina Contractor's license.

3. Each bidder shall indicate its North Carolina Contractor's License number on the bid envelope and the Bid Form.

License Classification shall be:

Public Utilities	Unlimited
Unclassified	Unlimited

E. Examination of Contract Documents and Site

1. Before submitting a Bid, each Bidder shall (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work, and (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) give the PWC Purchasing Manager written notice of all conflicts, errors or discrepancies in the Contract Documents.
2. Bidder should consult the Specifications for the identification of those reports of investigations and tests of subsurface and latent physical conditions at the site or reports that otherwise may affect cost, progress, or performance of the Work which may have been utilized by Design Engineer in preparation of the Drawings and Specifications. Owner will make copies of such reports if available at the cost (non-refundable) of reproduction to any Bidder requesting them. These reports are not intended to constitute any explicit or implicit representation as to the nature of the subsurface and latent physical conditions, which may be encountered at the site or to constitute explicit or implicit representations as to any other matter, contained in any report. Such reports are not guaranteed as to accuracy or completeness and are not part of the Contract Documents. Before submitting his Bid each Bidder will, at his own expense, make such investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the Work in accordance with the Contract Documents.
3. On request, the Owner will provide each Bidder access to the site to conduct such investigations and tests on request 48 hours in advance, as each Bidder deems necessary for submission of his Bid.
4. The lands upon which the Work is to be performed right-of-way for access thereto, and other lands available for use by the Contractor in performing the Work are identified in these Contract Documents.
5. The submission of a Bid constitutes an incontrovertible representation by the Bidder that he has complied with every requirement of this Section and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

F. Interpretations and Addenda

1. All questions about the meaning or intent of the bid or Contract Documents shall be submitted in writing to Gloria Wrench, The Public Works Commission, Procurement Department, 955 Old Wilmington Rd, Fayetteville, NC 28301 via Fax 910-483-1429 or email gloria.wrench@faypwc.com. In order to receive consideration, questions must be received by

Owner no later than 5:00 pm on Friday, September 8, 2017. Any interpretations of questions so raised, which in the opinion of Project Engineer require interpretations, will be issued by Addenda mailed or delivered to all parties recorded by Owner and/or Design Engineer as having received the Contract Documents, not later than one (1) day prior to receipt of Bids. An Addendum extending the date for the receipt of Bids or an Addendum withdrawing the Invitation to Bid may be issued any time prior to the date set for the receipt of Bids. Owner and Design Engineer will not be responsible for oral interpretations or clarifications, which anyone presumes to make on their behalf. **Bidders are expressly prohibited from contacting any PWC official or employee associated with this project, except as noted above. Violation of this prohibition is grounds for the immediate disqualification of the bidder.**

2. The Owner may issue such additional Addenda as may be necessary to clarify, correct or change the Contract Documents. Such Addenda, if any, will be issued in the manner and within the time stated in Paragraph 1 of this Section.
3. Each Bidder shall be responsible for determining that all Addenda issued by the Owner have been received before submitting a Bid for the Work.
4. Each Bidder shall acknowledge the receipt of each Addendum on the Bid Form.

G. Taxes

1. The Successful Bidder shall pay all county, city, state and federal taxes required by laws in effect at the time Bids are received and resulting from the Work or traceable thereto, under whatever name levied.
2. Said taxes shall not be in addition to the contract price between the Owner and the Successful Bidder, as the taxes shall be an obligation of the Successful Bidder and not of the Owner, and the Owner shall be held harmless for same by the Successful Bidder.

H. Submission of Bids

1. All Bidders shall use the enclosed Bid Form in submitting their bid prices. The Owner will not accept oral Bids or Bids received by telephone, Telecopier (FAX machine) for this Bid.
2. All prices must be F.O.B. delivered to the point as indicated by this Bid. The Owner will grant no allowance for boxing, crating, or delivery unless specifically provided for in this Bid.
3. The Bid Form must be completed in blue or black ink or by typewriter. Discrepancies between amounts shown in words and amounts shown in figures will be resolved in favor of the amounts shown in words. Discrepancies in the multiplication of units of Work and the unit prices will be resolved in favor of the correct multiplication of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
4. Proposals sent by mail should be registered mail. The sealed Proposal, marked as indicated above, should be enclosed in an additional sealed envelope similarly marked and addressed to:

Fayetteville Public Works Commission
Attn: Procurement Dept
Gloria Wrench, Procurement Manager
955 Old Wilmington Road
Fayetteville, North Carolina 28301

5. Mark envelope in the lower left-hand corner with the project title, hour and due date of Bid, and the Bidder's North Carolina contractor registration number.
6. Bids sent by mail and arriving after the time for opening of Bids shall not be considered as valid Bids. In such instances, the Bidders shall have no claim against the Owner.
7. All items contained in the Bid Proposal Checklist (Section 00300 Contract Forms) shall be completely filled out and submitted with the bid. Failure to submit any of the items requested with the Bid Form may be just cause for rejection of the Bid by Owner.
8. All erasures, insertions, additions, and other changes made by the Bidder to the Bid Form shall be signed or initialed by the Bidder. Bids containing any conditions, omissions, erasures, alterations, or items not called for in the Bid, may be rejected by the Owner as being incomplete or nonresponsive.
9. The Bid Form must be signed in order to be considered. If the Bidder is a corporation, the Bid must be submitted in the name of the corporation, not simply the corporation's trade name. In addition, the Bidder must indicate the corporate title of the individual signing the Bid.
10. The Bid Form, the Bid security, if any, and any other documents required, shall be enclosed in a sealed opaque envelope. Any notation or notations on the exterior of the envelope purporting to alter, amend, modify, or revise the bid contained within the envelope shall be of no effect and shall be disregarded.
11. The date and time of the receipt of Bids shall be determined by the date stamp from the Purchasing Department. Bidders are responsible for ensuring that their Bids are stamped by Purchasing Department personnel by the deadline indicated.
12. All Bids received in the Purchasing Department by the deadline indicated will be kept in a locked box until the time and date set for the opening of Bids.
13. All late Bids shall be returned unopened to the sender.

I. **Bid Security**

1. Each Bid shall be accompanied by Bid security in the form of either a cashier's or certified check or an acceptable Bid Bond in the amount of five percent (5%) of the Bid amount, and made payable to the Public Works Commission, City of Fayetteville, North Carolina.
2. The Bid security is a guarantee that if the contract is awarded by the Owner to the Bidder, the Bidder shall enter into the contract with the Owner for the work mentioned in this Bid or forfeit the Bid security to the Owner, not as a penalty, but as liquidated damages.

3. No forfeiture under a Bid security shall exceed the lesser of (a) the difference between the Bid for which the Bid security was written and the next low Bid of another Bidder, or (b) the face amount of the Bid security (Code of North Carolina, Section 11-57B).
4. All bonds shall be executed by a surety company selected by the Bidder, which is legally authorized to do business in the State of North Carolina (NCGS Chapter 44 A-26), and the bond shall be the same in both form as well as substance as AIA Document A310, Bid Bond.
5. The Bidder shall require the attorney-in-fact, who executed the required bond on behalf of the surety company, to affix thereto a certified and current copy of the power of attorney.
6. The bond premium shall be paid by the Bidder and the cost shall be included in the Bid price.
7. Any inspection of procurement transaction records shall be subject to reasonable restrictions to ensure the security and integrity of the records.

J. Modification of Bids

1. A Bid may be modified or withdrawn by the Bidder any time prior to the time and date set for the receipt of Bids. The Bidder shall notify the PWC Purchasing Department in writing of its intentions.
2. Modified and withdrawn Bids may be resubmitted to the PWC Purchasing Department up to the time and date set for the receipt of Bids.

K. Substitute Material and Equipment

1. Substitute or "or-equal" items shall be submitted to the Owner prior to the Pre-Bid meeting. Proposed substitutes or "or-equals" shall be submitted in accordance with Specification 1300 Submittals and shall include at a minimum the items required under the Shop Drawings and Product Data sections of this specification. In addition the submittal shall specifically note any changes to the design documents required for the use of the proposed substitute or "or-equal" product. The Owner may reject the proposed substitution at their sole discretion. No justification shall be necessary for the rejection. Substitute or "or-equal" items deemed acceptable shall be incorporated in an addendum a minimum of 7 days prior to the bid.

L. Subcontractors

1. Each Bidder shall submit to Owner with its bid the List of Subcontractors, Suppliers, other persons, and organizations proposed for those portions of the Work for which such identification is required. If Owner after due investigation has reasonable objection to any proposed Subcontractor, Supplier, other person or organization, Owner may, before Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute without an increase in the Bid.
2. If the apparent Successful Bidder declines to make such a substitution, Owner may award the Contract to the next lowest responsible Bidder that proposes to use acceptable Subcontractors, Suppliers, and other persons, and organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the bid security of any Bidder. Any Subcontractor, Supplier,

other person, or organization listed and to whom the Owner or, does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner, subject to revocation as provided in the General Conditions.

M. Opening of Bids

1. Bids will be opened publicly and read aloud on the date set for the receipt of Bids in the Invitation to Bid.
2. Any Bidder, upon request, shall be afforded the opportunity to inspect Bid records within a reasonable time after the opening of all Bids but prior to award, except in the event that the Owner decides not to accept any of the Bids and to reopen the contract. Otherwise, Bid records shall be open to public inspection only after award of the Contract.
3. Any inspection of procurement transaction records shall be subject to reasonable restrictions to ensure the security and integrity of the records.

N. Withdrawal of Bid Due to Error

1. If the Bidder desires to withdraw his proposal, he must do so before the time fixed for the opening, without prejudice by communicating his purpose in writing to the Owner, and when reached it shall be handed to him or to his authorized agent unread. After bids are open, bids may only be withdrawn in strict accordance with N.C.G.S. Section 143-129-1.

O. Bids to Remain Open

1. All Bids shall remain open for 90 days after the day of the Bid Opening.

P. Award of Contract

1. Owner reserves the right to reject any and all Bids, to waive any and all informalities, and to disregard all nonconforming, nonresponsive or conditional Bids.
2. In case of a tie Bid, the tie shall be decided by lot.
3. It is the intent of the Public Works Commission to recommend the award of this contract to the lowest responsive and responsible Bidder provided the Bid has been submitted in accordance with the requirements of the bidding documents and does not exceed the funds available. In determining the lowest responsive Bidder, the Owner may consider, among other things, the Bidder's past performance conduct on other contracts, and other information provided by the Bidder as noted below.
4. For the purpose of determining the lowest responsive Bidder, the Basis of Award shall be the total of the Bid Proposal that demonstrates lowest cost of project with the sum of parts or as a whole. Fayetteville PWC reserves the right to award Contract 1 and 2 combined (or) Contract 2 and 3 combined (or) Contract 1 or Contract 3 and Contract 2 separately.

5. Owner may consider the operating costs, maintenance considerations, performance date, and guarantees of materials and equipment.
6. Owner may conduct such investigations as he deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Bidders, as well as other considerations, to include but not limited to resources available to the Bidder to perform the work effectively, proposed Subcontractors and other persons and organizations to do the work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.
7. Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.
8. If the Contract is to be awarded, Owner will give the Successful Bidder a Notice of Award within 90 days after the day of the Bid Opening.
9. The Bidder to whom the contract is awarded shall, within ten (10) days after prescribed documents are presented for signature, execute and deliver to the Owner the Contract Documents and any other forms or bonds required by the Bid.
10. The Owner may conduct such investigations/verifications as deemed necessary to establish the responsibility, qualification and financial ability of the Bidder. Should the Owner adjudge that the apparent low bidder is not the lowest responsive, responsible bidder by virtue of the information furnished, said apparent low bidder will be so notified and his bid security shall be returned to him without prejudice. Failure or refusal to furnish any items of information requested by the Owner shall be considered as non-responsive and therefore basis for rejection of the bid.
11. The Bidder is required to complete the attached forms that forms will allow PWC to verify that the Bidder is qualified to perform the Work described in these Contract Documents. All forms shall be completed and submitted with the Bid. Failure to submit all the required forms shall be considered grounds for PWC to reject the bid.
12. PWC will review all of the bids and qualification data to determine the lowest responsive, responsible Bidder. PWC reserves the right to not award the Contract to the lowest bidder if the information provided is not complete, does not meet the satisfaction of PWC, or has been falsified. PWC will not request any additional information in order to allow the Contractor to complete bid.
13. During the evaluation phase, bid proposals will be reviewed to ascertain which proposals technically and otherwise address all the requirements of these Contract Documents. Proposals determined to be technically non-responsive or not sufficiently responsive may be disqualified. Once qualified proposals have been determined, PWC may interview selected Bidders to clarify specific matters presented in the proposals. These discussions will allow both the Bidder to elaborate on his/her proposal and for PWC to request other pertinent information. PWC will use information gained during such discussions, if any, together with information presented in the proposal to determine the lowest responsive, responsible bidder.
14. The Bidder shall address each of the Evaluation Criteria as requested in the Technical Evaluation Criteria Form located within Section 00300 Contract Forms. To be considered substantive, the information must respond to all requirements.

Q. Performance and other Bonds

1. The General Conditions set forth Owner's requirements as to Performance and other Bonds.

R. Small Disadvantaged Business Enterprise Program

1. In accordance with NCGS 143-128.2, the Public Works Commission and The City of Fayetteville have a 10% goal for small, minority and women owned business participation on this project. Bidders are hereby notified that the requirements of the City of Fayetteville and The Public Works Commission Small Disadvantaged Business Enterprise Program for Construction, Procurement and Professional Services (a copy of which is included in these contract documents) shall be adhered to in the submission of all bids and shall be made a part of this contract.

The approved SDBE participation submitted by the Contractor shall be the contract requirement.

2. Bidder shall submit, with his Proposal, the Small Disadvantaged Business Enterprise documentation requested in these specifications. It is strongly recommended that the Bidder attend the pre-bid, as important information will be reviewed. Failure to submit proper documentation may result in disqualification of the proposal. Questions regarding SDBE requirements shall be directed to Mark Cannady, Procurement Supervisor at (910) 223-4366.

S. E-Verify Requirements

Contractor/Vendor hereby acknowledges that "E-Verify" is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. Contractor/Vendor further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must E-Verify and after hiring an employee through E-Verify in accordance with NCGS 64-26(a). Contractor/Vendor hereby pledges, attests and warrants through execution of this agreement that Contractor/Vendor complies with the requirements of Article 2, Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that any subcontractors currently employed by or subsequently hired by Contractor/Vendor shall comply with any and all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Agreement.

T. Iran Divestment Act

As mandated by N.C.G.S. 147-86.59(a), Contractor/Vendor hereby certifies that it is not listed on the Final Divestment List created by the North Carolina State Treasurer pursuant to N.C.G.S. 147-86.58. Contractor/Vendor further certifies that in accordance with N.C.G.S. 146-86.58(b) that it shall not utilize any subcontractor found on the State Treasurer's Final Divestment List. Contractor/Vendor certifies that the signatory to this Purchase Order authorized by the Contractor/Vendor to make the foregoing statement.

U. **Utilization of Small Business Concerns**

- 1) Definitions. As used in this contract –
 - a) HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.
 - b) Service-disabled veteran-owned small business concern –
 - i) Means a small business concern -
 - (1) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and
 - (2) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.
 - ii) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16). Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto. Small disadvantaged business concern, consistent with 13 CFR 124.1002, means a small business concern under the size standard applicable to the acquisition, that –
 - iii) Is at least 51 percent unconditionally and directly owned (as defined at 13 CFR 124.105) by –
 - (1) One or more socially disadvantaged (as defined at 13 CFR 124.103) and economically disadvantaged (as defined at 13 CFR 124.104) individuals who are citizens of the United States; and
 - (2) Each individual claiming economic disadvantage has a net worth not exceeding \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
 - iv) The management and daily business operations of which are controlled (as defined at 13.CFR 124.106) by individuals, who meet the criteria in paragraphs (1)(i) and (ii) of this definition.
 - c) Veteran-owned small business concern means a small business concern –
 - i) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
 - ii) The management and daily business operations of which are controlled by one or more veterans.
 - d) Women-owned small business concern means a small business concern –
 - i) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
 - ii) Whose management and daily business operations are controlled by one or more women.
- 2) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the

United States that its prime Vendors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

- 3) The Vendor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Vendor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Vendor's compliance with this clause.
- 4) Vendors acting in good faith may rely on written representations by their subconsultants regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a small disadvantaged business concern, or a women-owned small business concern.
- 5) The Vendor shall confirm that a subconsultant representing itself as a HUBZone small business concern is certified by SBA as a HUBZone small business concern by accessing the System for Award Management database or by contacting the SBA. Options for contacting the SBA include –
 - a) HUBZone small business database search application Web page at http://dsbs.sba.gov/dsbs/search/dsp_searchhubzone.cfm; or <http://www.sba.gov/hubzone>;
 - b) In writing to the Director/HUB, U.S. Small Business Administration, 409 3rd Street, SW., Washington DC 20416; or The SBA HUBZone Help Desk at hubzone@sba.gov.

*** END OF SECTION ***

**CITY OF FAYETTEVILLE
AND
PUBLIC WORKS COMMISSION OF THE
CITY OF FAYETTEVILLE
SMALL DISADVANTAGED BUSINESS
ENTERPRISE PROGRAM
FOR
CONSTRUCTION, PROCUREMENT, AND
PROFESSIONAL SERVICES**

**FAYETTEVILLE CITY COUNCIL
433 HAY STREET
FAYETTEVILLE, NORTH CAROLINA 28301**

SMALL DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

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SMALL DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

I. Applicability.

(a) This program shall apply to all construction and repair work involving the expenditure of City funds, regardless of the sources of other funds, in the amounts set forth in G.S. 143-129 and G.S. 143-131; this program shall also apply to the procurement of architectural, engineering and surveying services as outlined in G.S. 143-64.31. This program shall not apply to contracts established by the State or any agency of the State.

(b) If any section, subsection, clause or provision of this chapter, including those groups found to be presumptively socially disadvantaged, is held to be invalid by a court of competent jurisdiction, the remainder of the chapter shall not be affected by such invalidity.

II. Definitions.

As used in this part, the following terms shall have the following meanings:

Affiliation - One firm controls or has the power to control the other, or a third party or parties controls or has the power to control both, or an identity of interests exists between such firms. In determining whether firms are Affiliates, the City shall consider all appropriate factors, including common ownership, common management, and contractual relationships. Affiliates must be considered together in determining whether a firm is a Small Business Enterprise.

Bidder/Participant - Any person, firm, partnership, corporation, limited liability company, association or joint venture seeking to be awarded a public contract or subcontract.

Brokering - Filling orders by purchasing or receiving supplies from a third party supplier rather than out of existing inventory, and providing no Commercially Useful Function other than acting as a conduit between a supplier and a customer.

City - The awarding authority for contracts awarded by the City of Fayetteville and the City of Fayetteville Public Works Commission.

City's Marketplace - The geographic and procurement areas in which the City contracts on an annual basis.

Commercially Useful Function - Responsibility for the execution of a distinct element of the work of the contract which is carried out by actually performing, managing, and supervising the work involved, or fulfilling responsibilities as a joint venture.

Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment or services and obligating the buyer to pay for them, not including leases or emergency procurements.

Doing Business - Having a physical location from which to engage in for profit activities in the scope(s) of expertise of the firm.

Economically Disadvantaged - An individual whose Personal Net Worth is less than the amount identified in 49 CFR Part 26

Equipment - Materials, supplies, commodities and apparatuses.

Expertise - Demonstrated skills, knowledge, or ability to perform in the field of endeavor in which certification is sought by the firm as defined by normal industry practices, including licensure where required.

Good Faith Efforts - Actions undertaken by a Bidder/Participant to achieve a SDBE goal which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the Program's requirements.

Joint Venture - An association of two or more persons, or any combination of types of business enterprises and persons numbering two or more, proposing to perform a single for profit business enterprise, in which each joint venture partner contributes property, capital, efforts, skill and knowledge, and in which the SDBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture is commensurate with its ownership interest. Joint ventures must have an agreement in writing specifying the terms and conditions of the relationships between the partners and their relationship and responsibility to the contract.

Managers - The City Manager and the Public Works Commission General Manager.

Manufacturer - A firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

Personal Net Worth - The net value of the assets of an individual after total liabilities are deducted. An individual's Personal Net Worth does not include the individual's ownership interest in an applicant or the individual's equity in his or her primary place of residence. An individual's Personal Net Worth includes only his or her share of assets held jointly with the individual's spouse.

Program - The SDBE Program.

Project Specific Goal - The Goal established for a particular project or contract based upon the availability of SDBEs in the scopes of work of the Contract.

Regular Dealer - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a Regular Dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A firm may be a Regular Dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business if the firm both owns and operates distribution equipment for the products. Any supplementing of a Regular Dealer's distribution equipment shall be by a long-term lease agreement and not on an *ad hoc* or contract-by-contract basis. Packers, manufacture representatives, or other persons who arrange or expedite transactions are not Regular Dealers.

Schedule of Participation - The list of SDBEs that the Bidder/Participant commits will be utilized, their scopes of the work, and dollar value or the percentage of the project they will perform.

Socially Disadvantaged - An individual who has been subjected to racial or ethnic prejudice or cultural bias within American society because of his or her identity as a member of a group and without regard to individual qualities. Social disadvantage must stem from circumstances beyond the individual's control. A Socially Disadvantaged individual must be a citizen or lawfully admitted permanent resident of the United States who is either:

- (a) A person whose lifelong cultural and social affiliation is with one of the following groups, which are rebuttably presumed to be Socially Disadvantaged:
 - (i) Blacks/African - Americans (persons having origins in any of the Black racial groups of Africa);
 - (ii) Hispanic - Americans (persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race);
 - (iii) Native - Americans (persons having origins in the original groups of North America);
 - (iv) Asian - Americans (persons having origins in any of the original groups of the Far East, Southeast Asia, the islands of the Pacific or the Indian Subcontinent);

- (v) Women; or
- (b) Any socially disadvantaged individual as defined by 15 U.S.C. 637.

Small Disadvantaged Business Enterprise (SDBE) - Means a business, including a sole proprietorship, partnership, corporation, limited liability company, joint venture or any other business or professional entity:

- (a) Which is at least 51 percent owned by one or more Socially and Economically Disadvantaged individuals, or in the case of a publicly owned business, at least 51 percent of all classes of the stock of which is owned by one or more Socially and Economically Disadvantaged individuals;
- (b) Whose management, policies, major decisions and daily business operations are independently managed and controlled by one or more such Socially and Economically Disadvantaged individuals;
- (c) Which is a Small Business Enterprise as defined by 13 CFR Part 121;
- (d) Which is Doing Business in the City's Marketplace; and
- (e) Which is certified as a SDBE by the City of Fayetteville.

SDBE Program Coordinator - The person designated by the Managers to administer the Program.

III. SDBE Program Administration.

The Coordinator shall administer the SDBE Program, which duties shall include:

- (a) Formulating, proposing, and implementing rules and regulations for the further development, implementation, and monitoring of the Program.
- (b) Informing SDBEs of City contracting opportunities through outreach activities.
- (c) Providing information and assistance to SDBEs relating to City procurement practices and procedures, and bid specifications, requirements, and prerequisites.
- (d) Certifying businesses as SDBEs, maintaining certification records, and ensuring that all City departments have current certification listings.
- (e) Establishing Project Specific Goals.

- (f) Evaluating Bidder/Participant's achievement of Project Specific Goals or Good Faith Efforts to meet Project Specific Goals.
- (g) Working with City departments to monitor Contracts to ensure prompt payments to SDBEs, compliance with Project Specific Goals and commitments and the Program's operations and objectives.
- (h) Receiving, reviewing, and acting upon complaints and suggestions concerning the Program.
- (i) Collecting data to evaluate the Program.
- (j) Monitoring the Program and reporting to the Managers, the Mayor and the City Council on the administration and operations of the Program.

IV. Race- and Gender-Neutral Measures to Ensure Equal Opportunities for All Bidders/Participants.

The City shall develop and use measures to facilitate the participation of all firms in City contracting activities. These measures shall include, but are not limited to:

- (a) Arranging solicitation times for the presentations of bidding opportunities, which includes quantities, specifications and delivery schedules so as to facilitate the participation of interested firms.
- (b) Dividing requests for bids or proposals into work elements to facilitate the participation of small firms.
- (c) Providing timely information on specific contracting opportunities, contracting procedures, and bid preparation.
- (d) Holding pre-bid conferences, where appropriate, to explain the projects.
- (e) Enforcing prompt payment requirements and procedures, including requiring by contract that prime contractors promptly pay subcontractors.
- (f) Reviewing bonding and insurance requirements to eliminate unnecessary barriers to contracting with the City.
- (g) Maintaining information on all firms bidding on City prime contracts and subcontracts.

V. SDBE Program Eligibility.

(a) Only businesses that meet the criteria of SDBEs may participate in the Program.

(b) The City shall apply the certification criteria and procedures of 49 CFR Part 26 to applicants for participation in the Program.

(c) The City shall certify the eligibility of joint ventures involving SDBEs and non-SDBEs.

(d) In lieu of conducting its own certifications, the Coordinator may accept formal certifications by other entities as meeting the requirements of the Program, if the eligibility standards of such entities are comparable to those of the City. Certification decisions, including decertification and graduation determinations, by those other entities shall be accepted by the City in its discretion.

(e) It is the responsibility of the SDBE to notify the Coordinator of any change in its circumstances affecting its continued eligibility for the Program. Failure to do so may result in the firm's decertification.

(f) A SDBE may be decertified if it submitted inaccurate, false, or incomplete information to the City or failed to comply with requirements of a contract with the City or with the requirements of the Program.

(g) A third party may challenge the eligibility of a certified firm:

(1) The challenge shall be made in writing under oath and shall include all information relied upon by the challenging party.

(2) The Coordinator shall provide an opportunity to the parties for an informal hearing. The parties may appear and provide documentation or other evidence and be represented by counsel.

(3) The Coordinator shall render a written decision within 15 days of the hearing.

(4) If the Coordinator determines that the firm is not eligible, it may appeal the determination to the Manager in writing within 7 days of receipt of the written decision. The challenging party shall have no right of appeal from the Coordinator's determination.

(5) The Manager shall issue a written decision within 15 days of receipt of the appeal. The Manager's determination shall be final.

(h) A firm that has been decertified may not reapply for certification for one year from the effective date of its decertification.

VI. SD BE Goal Setting.

The Coordinator shall establish a Project Specific Goal for appropriate Contracts based on normal industry practice as determined in consultation with the appropriate Department, the availability of SDBEs to perform the functions of the Contracts and the City's utilization of SDBEs to date.

VII. Counting Participation of SDBEs.

(a) The entire amount of that portion of a construction Contract that is performed by the SDBE's own forces shall be counted, including the cost of equipment obtained by the SDBE for the work of the Contract, and equipment purchased or leased by the SDBE (except equipment the SDBE subcontractor or Joint Venture partner purchases or leases from the prime contractor or its Affiliate).

(b) The entire amount of fees or commissions charged by a SDBE for providing a *bona fide* service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of the Contract, shall be counted, provided the fee is reasonable and not excessive as compared with fees customarily charged for similar services.

(c) When a SDBE performs as a participant in a Joint Venture, only the portion of the total dollar value of the Contract equal to the distinct, clearly defined portion of the work of the Joint Venture's Contract that the SDBE performs with its own forces and for which it is separately at risk shall be counted.

(d) Only expenditures to a SDBE that is performing a Commercially Useful Function shall be counted. To determine whether a firm is performing a Commercially Useful Function, the City will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the Contract is commensurate with the work it is actually performing and other relevant factors. To perform a Commercially Useful Function, the SDBE must be responsible, with respect to equipment used on the Contract, for negotiating price, determining quality and quantity, ordering the material, installing (where applicable) and paying for the material itself. A SDBE does not perform a Commercially Useful Function if its role is limited to that of an extra participant in the Contract through which funds are passed in order to obtain the appearance of SDBE participation. If a SDBE subcontracts a greater portion of the work of a Contract than would be expected on the basis of normal industry practice, it is presumed not to perform a Commercially Useful Function. When a SDBE is presumed not to be performing a Commercially Useful Function, the SDBE may present evidence to rebut this presumption.

(e) One hundred percent of the cost of the materials or supplies obtained from a SDBE Manufacturer or Regular Dealer shall be counted. One hundred percent of the fees or transportation charges for the delivery of materials or supplies required on a job site shall be counted only if the payment of such fees is a customary industry practice and are commensurate with fees customarily charged for similar services. The cost of the materials and supplies shall not be counted.

(f) If a firm is decertified during performance of a Contract, the dollar value of work performed under a Contract with that firm after it has been decertified shall not be counted.

(g) In determining achievement of a Project Specific Goal, the participation of a SDBE shall not be counted until that amount has been paid to the SDBE.

VIII. Procurement of Architectural, Engineering and Surveying Services (G.S. 143-64.31)

(a) The City shall use good faith efforts to notify minority firms of the opportunity to submit qualifications for architectural, engineering, surveying and construction management at risk services.

IX. Informal Construction and Repair Work (G.S. 143-131)

(a) The City shall solicit minority participation for construction and repair projects in the amount of five thousand dollars (\$5,000) or more, but less than three hundred thousand dollars (\$300,000). The City shall maintain a record of contractors solicited and shall document efforts to recruit minority business participation in these contracts.

X. Formal Construction and Repair Work (G.S. 143-129)

(a) For all solicitations, the Bidder/Participant shall submit a Schedule of Participation detailing all subcontractors from which the Bidder/Participant solicited bids or quotations, and if a Project Specific Goal has been established, its achievement of the Goal or its Good Faith Efforts to do so. The list of SDBEs provided by the City to a Bidder/Participant establishes the minimum universe from which a Bidder/Participant must solicit SDBEs. The Schedule of Participation shall be due at the time set out in the solicitation documents.

(b) Any agreement between a Bidder/Participant and a SDBE in which the Bidder/Participant requires that the SDBE not provide subcontracting quotations to other bidders/proposers is prohibited.

(c) SDBEs shall respond to relevant requests for quotations.

(d) Where the Bidder/Participant cannot achieve the Project Specific Goal, the Coordinator will determine whether the Bidder/Participant has made Good Faith Efforts. At a minimum, the Bidder/Participant must engage in the following Good Faith Efforts that total at least 50 points for the bid or proposal to be responsive.

- (1) Contacting SDBEs from the list provided by the City at least ten days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. The Bidder/Participant shall provide interested SDBEs with timely, adequate information about the plans, specifications, and requirements of the Contract to allow SDBEs to respond to the solicitation. The Bidder/Participant must follow up initial solicitations with interested SDBEs. 10 points.
- (2) Providing or making the construction plans, specifications, and requirements available for review by SDBEs at least ten days before the bid or proposals are due. 10 points.
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation. 15 points.
- (4) Working with SDBE, minority, women, trade, community or contractor organizations identified by the City in the bid documents that provide assistance in recruitment of SDBEs. 10 points.
- (5) Attending any prebid meetings scheduled by the City. 10 points.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. 20 points.
- (7) Negotiating in good faith with interested SDBEs and not rejecting them as unqualified without sound reasons based on their capabilities. Evidence of such negotiation includes the names, addresses, and telephone numbers of SDBEs that were contacted; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and why agreements could not be reached with SDBEs. The Bidder/Participant may not reject SDBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection of a SDBE based on price or lack of qualifications must be documented in writing. 15 points.
- (8) Providing assistance to an otherwise qualified SDBE in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting SDBEs in obtaining the same unit pricing with the bidder's suppliers in order to help minority SDBEs to establish credit. 25 points.

(9) Negotiating joint venture and partnership arrangements with SDBEs to increase opportunities for SDBE participation. 20 points.

(10) Providing quick pay agreements and policies to enable SDBEs to meet cash-flow demands. 20 points.

(e) In determining whether a Bidder/Participant has made Good Faith Efforts, the performance of other bidders/proposers in meeting the Project Specific Goal may be considered. For example, when the apparent successful Bidder/Participant fails to meet the Project Specific Goal but others meet it, it may be reasonably questioned whether, with additional reasonable efforts, the apparent successful Bidder/Participant could have met the Goal. Similarly, if the apparent successful Bidder/Participant fails to meet the Goal, but meets or exceeds the average SDBE participation obtained by other bidders/proposers, this may be evidence that the apparent successful Bidder/Participant made Good Faith Efforts.

(f) The Coordinator shall timely review the Schedule of Participation prior to award, including the scope of work and the letters of intent from SDBEs. The Coordinator may request clarification in writing of items listed in the Schedule of Participation, provided such clarification shall not include the opportunity to augment listed SDBE participation or Good Faith Efforts.

(g) The Schedule of Participation and supporting documents shall be reviewed by a Bid Selection Committee, composed of the operating departments, Purchasing Department, Coordinator and other representatives as appropriate. If the Bid Selection Committee initially determines the bid to be responsive, it shall recommend award of the Contract to the Managers. If the Bid Selection Committee determines the bid to be non-responsive, it shall confer with the City Attorney prior to recommending the rejection of the bid.

(h) A Bidder/Participant found to be non-responsive may appeal this determination pursuant to the City's bid protest procedures.

XI. Contract Performance Compliance Procedures.

(a) Upon award of a Contract by the City that includes a Project Specific Goal, the Goal becomes a covenant of performance by the Bidder/Participant in favor of the City.

(b) The Bidder/Participant shall provide a listing of all subcontractors to be used in the performance of the Contract, and subcontractor payment information to the City with each request for payment submitted to the City. The Coordinator and the operating department shall monitor subcontractor participation during the course of the Contract and shall have reasonable access to all Contract-related documentation held

by the Bidder/Participant. The Bidder/Participant shall submit reports at such times and in such formats as requested by the City.

(c) The Bidder/Participant shall cooperate with the City in studies and surveys related to the Program.

(d) The Bidder/Participant cannot make changes to the Schedule of Participation or substitute subcontractors named in the Schedule of Participation without the prior written approval of the Coordinator. Unauthorized changes or substitutions shall be a violation of this program, and may constitute grounds for rejection of the bid or proposal or cause termination of the executed Contract for breach, the withholding of payment and/or subject the Bidder/Participant to Contract penalties or other sanctions.

- (1) All requests for changes or substitutions of the subcontractors named in the Schedule of Participation shall be made to the Coordinator in writing, and shall clearly and fully set forth the basis for the request. A Bidder/Participant shall not substitute a subcontractor or perform the work designated for a subcontractor with its own forces unless and until the Coordinator approves such substitution in writing.
- (2) The facts supporting the request must not have been known nor reasonably should have been known by either party prior to the submission of the Schedule of Participation. Bid shopping is prohibited.
- (3) Substitutions of the subcontractor shall be permitted only on the following basis:
 - (i) Unavailability after receipt of reasonable notice to proceed.
 - (ii) Failure of performance.
 - (iii) Financial incapacity.
 - (iv) Refusal by the subcontractor to honor the bid or proposal price.
 - (v) Mistake of fact or law about the elements of the scope of work of a solicitation where agreement upon a reasonable price cannot be reached.
 - (vi) Failure of the subcontractor to meet insurance, licensing, or bonding requirements; or
 - (vii) The subcontractor's withdrawal of its bid or proposal.
- (4) Where the Bidder/Participant has established the basis for the substitution to the satisfaction of the Coordinator, the Bidder/Participant shall make

Good Faith Efforts to fulfill the Schedule of Participation if the Project Specific Goals will not otherwise be met. The Bidder/Participant may seek the assistance of the SDBE Office in obtaining a new SDBE subcontractor. If the Project Specific Goal cannot be reached and Good Faith Efforts have been made, the Bidder/Participant may substitute with a non-SDBE.

(e) If a Bidder/Participant plans to hire a subcontractor on any scope of work that was not previously disclosed in the Schedule of Participation, the Bidder/Participant shall obtain the approval of the Coordinator to modify the Schedule of Participation and must make Good Faith Efforts to ensure that SDBEs have a fair opportunity to bid on the new scope of work.

(f) The SDBE Compliance Committee, comprised of the Coordinator as the Chair and a representative from the Purchasing Department or any requested representative, shall be responsible for evaluating and reviewing issues and concerns concerning the Program, including whether a Bidder has complied with the Good Faith Efforts.

(g) If the Bidder/Participant is found to be in noncompliance with the Program or the Contract and fails to correct such noncompliance within ten working days after written notification, the City will withhold 5 percent of the amount of completed work on all monthly payments until the Bidder/Participant has come into compliance.

XII. Protest Procedure.

A Bidder/Participant may protest a decision regarding the implementation of the Program, including the determination that it has not made Good Faith Efforts, by filing a written grievance with supporting evidence with the Coordinator. The Coordinator shall provide a written response within ten working days of receipt of the grievance. The Bidder/Participant may appeal the Coordinator's determination in writing within ten working days of receipt to the Purchasing Director. The Director shall refer the grievance to the SDBE Compliance Committee, which shall hold a hearing and issue a written recommendation within ten working days. The Manager, upon receipt of the SDBE Compliance Committee's recommendation, shall make a final determination within ten working days.

XIII. Dispute Resolution.

Notwithstanding the protest procedures outlined above, mediation shall be required for all parties involved in a dispute under this program prior to initiating litigation concerning the dispute. The procedures for mediation shall be those adopted by City Council Resolution #2002-066 which is incorporated herein by reference as if fully set forth herein.

XIV. Penalties.

(a) Providing false or misleading information to the City in connection with an application for or challenge to certification, recertification or decertification as a SDBE, submission of a bid, responses to requests for qualifications or proposals, Good Faith Efforts documentation, post-award compliance, or other actions in violation of this program may render any bid award or contract void. A contract that is void under this section may continue in effect until an alternative can be arranged when immediate termination would result in harm to the public health or welfare.

(b) A Bidder/Participant is subject to withholding of payments under the Contract, termination of the Contract for breach, Contract penalties, decertification as a SBDE, or being barred or deemed non-responsive in future City solicitations and Contracts for up to two years, if it is found to have:

- (1) Provided false or misleading information in connection with the submission of a bid or proposal or documentation of Good Faith Efforts, post-award compliance, or other Program operations.
- (2) Failed in bad faith to fulfill the Project Specific Goal, thereby materially breaching the Contract.
- (4) Repeatedly failed to comply in good faith with substantive provisions of this program.

(c) The City reserves the right to pursue all remedies available in law or in equity for violations of this program.

XV. Program Review.

(a) The Managers, the Mayor, and the City Council shall receive an annual report from the Coordinator detailing the City's performance under the Program.

(b) The Managers, the Mayor, and the City Council will review this report, including the City's progress towards eliminating discrimination in its contracting activities and marketplace, and revise the Program as necessary to meet legal and Program requirements.

(c) If the Managers, the Mayor, and the City Council find that the objectives of the Program have been achieved, the City Council shall sunset the Program.

**CITY OF FAYETTEVILLE
AND
PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE
SDBE COMPLIANCE PROVISIONS**

SDBE CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The requirements of the Small Disadvantaged Business Program for participation in the City of Fayetteville's construction contracts are hereby made a part of these contract documents. These requirements shall apply to all contracts regardless of ownership. Copies of the Program may be obtained from:

Public Works Commission
Purchasing Department/DBE Compliance Officer
P.O. Box 1089
Fayetteville, North Carolina 28302
Phone (910) 223-4366
Fax (910) 483-1429
e-mail: mark.cannady@faypwc.com

SDBE COMPLIANCE REQUIREMENTS

1. The Bidder shall provide, **with the bid**, the SDBE CONTRACT PROVISIONS (CONSTRUCTION), properly executed which signifies that the Bidder understands and agrees to the incorporated SDBE contract provisions.
2. The Bidder shall provide **with the bid**:
 - Affidavit B – INTENT TO PERFORM CONTRACT WITH OWN WORKFORCE, in making this certification the Bidder states that the Bidder does not customarily subcontract elements of this type project and will perform all elements of the work with his/her own current work forces; **and**
 - IDENTIFICATION OF SMALL DISADVANTAGED BUSINESS PARTICIPATION – This certifies that on this project the listed small disadvantaged business enterprises will be used as construction subcontractors, vendors, suppliers or providers of professional services. Enter zero dollars indicating no SDBE's are being used with this project; **or**
 - Affidavit A - LISTING OF GOOD FAITH EFFORTS **AND** IDENTIFICATION OF SMALL DISADVANTAGED BUSINESS PARTICIPATION, as certification that those small disadvantaged businesses listed will be used on this project.

3. Upon being named apparent low Bidder, The Bidder shall provide:

- Affidavit C – PORTION OF WORK TO BE PERFORMED BY SMALL DISADVANTAGED FIRMS, if the portion of the work to be executed by SDBE's is **equal to or greater** than 10% of the Bidders total contract price; or,
- Affidavit D - GOOD FAITH EFFORTS, if the goal of 10% participation by SDBE's **is not** achieved.

All written statements, certifications or intentions made by the Bidder shall become a part of the agreement between the Contractor and the City of Fayetteville for performance of this contract. Failure to comply with any of these statements, certifications or intentions, or with the SDBE compliance provisions shall constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the City of Fayetteville whether to terminate the contract for breach.

SUBCONTRACTOR PAYMENT REQUIREMENTS:

North Carolina General Statutes 143-134.1 (N.C.G.S.) states that the percentage of retainage on payments made by the prime contractor to the subcontractor shall not exceed the percentage of retainage on payments made by the City of Fayetteville to the prime contractor. Failure to comply with this provision shall be considered a breach of the contract, and the contract may be terminated in accordance with the termination provisions of the contract.

The Contractor shall provide an itemized statement of payments to each SDBE subcontractor before final payment is processed.

Date: _____

(Name of Company)

(Signature)

Attest: _____

(Above Name Typed or Printed)

(Title)

City of Fayetteville
Affidavit A - Listing of the Good Faith Efforts

Affidavit of _____
(Name of Bidder)

I have made a good faith effort to comply under the following areas checked:
(A minimum of 50 value points must be checked in order to have achieved a "good faith effort")

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. **Value = Ten (10) points.**
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due. **Value = Ten (10) points.**
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation. **Value = Fifteen (15) points.**
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses. **Value = Ten (10) points.**
- (5) Attending any pre-bid meetings scheduled by the public owner. **Value = Ten (10) points.**
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. **Value = Twenty (20) points.**
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing. **Value = Fifteen (15) points.**
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit. **Value = Twenty-five (25) points.**
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible. **Value = Twenty (20) points.**
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands. **Value = Twenty (20) points.**

In accordance with GS143-128.2 (d) the undersigned will enter into a formal agreement with the firms listed in the Identification of Small Disadvantaged Business Participation schedule conditional upon execution of a contract with the **Owner**. Failure to abide by this statutory provision will constitute a breach of the contract. The undersigned hereby certifies that he or she has read the terms of the small disadvantaged business commitment and is authorized to bind the Bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____



State of North Carolina, County of _____
Subscribed and sworn to before me this _____ day of _____ 20____
Notary Public _____
My commission expires _____

**CITY OF FAYETTEVILLE
AND
PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE
SDBE COMPLIANCE PROVISIONS
AFFIDAVIT B
Intent to Perform Contract with Own Workforce**

Affidavit of

(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the

_____ contract.

(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform **all elements of the work** on this project with his/her own current work forces; and will complete all elements of this project **without** the use of subcontractors, material suppliers or providers of professional services.

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

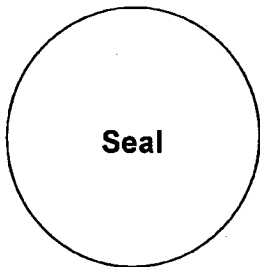
The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____

Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____
Subscribed and sworn to before me this ____ day of ____ 20__
Notary Public _____
My commission expires _____

THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL

**CITY OF FAYETTEVILLE
AND
PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE
SDBE COMPLIANCE PROVISIONS
AFFIDAVIT C**

PORTION OF THE WORK TO BE PERFORMED BY SMALL DISADVANTAGED FIRMS

If the portion of the work to be executed by small disadvantaged businesses as defined in G.S. 143-128.2(g) is equal to or greater than 10% of the Bidders total contract price, then the Bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive Bidder within **72 hours** after notification of being low Bidder.

Affidavit of _____ I do certify that on the
(Name of Company)

\$

(Project Number)

(Dollar Amount of Bid)

I will expend a minimum of _____% of the total dollar amount of the contract with small disadvantaged business enterprises. SDBE's will be employed as subcontractors, vendors, or providers of professional services. Such work will be subcontracted to the following firms listed below.

Name, Address and Phone No.	*SDBE Category	Description	Dollar Value	% of Contract

*SDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian-Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

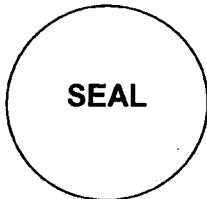
Pursuant to G.S. 143-128.2(d), the undersigned will enter into a formal agreement with small disadvantaged firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the Bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

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

Notary Public _____

My commission expires _____

**CITY OF FAYETTEVILLE
AND
PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE
SDBE COMPLIANCE PROVISIONS
AFFIDAVIT D**

Good Faith Efforts

If the goal of 10% participation by small disadvantaged businesses **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts

No.	Category		Value

*SDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

Documentation of the Bidder's good faith efforts to meet the goals set forth in these provisions. Examples of documentation shall include the following evidence:

- A. Copies of solicitations for quotes to small disadvantaged business firms. Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a small disadvantaged business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to small disadvantaged businesses, community or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster.
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for small disadvantaged businesses.
- H. Letter detailing reasons for rejection of a small disadvantaged business due to lack of qualification.
- I. Letter documenting proposed assistance offered to small disadvantaged businesses in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive Bidder.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

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

Notary Public _____

My commission expires _____

**CITY OF FAYETTEVILLE
AND
PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE
SDBE COMPLIANCE PROVISIONS
AFFIDAVIT E**

SDBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor: Sandy's Hauling & Backhoe Service, Inc.
 Address & Phone: P.O. Box 1156, Roseboro, NC 28382
 Project Name: Legion Hills Outfall and New Pinewood Lift Station
 Pay Application #: 5 Period: 9/29/18 thru 10/26/18

The following is a list of payments to be made to small disadvantaged business contractors on this project for the above-mentioned period.

Firm Name and Address	*SDBE Category	Payment Amount	Owner Use Only
None this period			

*SDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

Date: _____ Approved/Certified By: Arnold Sandy
 Name
 President
 Title

 Signature

****THIS DOCUMENT MUST BE SUBMITTED WITH EACH PAY REQUEST & FINAL PAYMENT****

**CITY OF FAYETTEVILLE
AND
PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE
SDBE COMPLIANCE PROVISIONS**

Identification of Small Disadvantaged Business Participation

I, _____
(Name of Bidder)

do hereby certify that on this project, we will use the following small disadvantaged business enterprises as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone No.	Description	*SDBE Category

*SDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

The total value of small disadvantaged business contracting will be (\$) _____.

BID PROPOSAL CHECKLIST

- 1. Enter Contractor's License Number where called for in the Bid Form and on the outside of the sealed envelope containing the Bid.
- 2. Photocopy of Contractor's License.
- 3. Bid Bond or other security.
- 4. Bid Form Section 00300.
- 5. Provide the responsible North Carolina Registered Agent for Insurance Claims. Include contact information.
- 6. Provide the proposed responsible Bonding Company name. Include contact information.
- 7. List of proposed Subcontractors and material suppliers exceeding 5% of the Contract Value.
- 8. Affidavit of Organization and Authority and Sworn Statement.
- 9. MWBE Contract Provisions Form.
- 10. Affidavit A – Listing of Good Faith Efforts et al.
- 11. Affidavit B – (Only if the Contractor will perform **ALL ELEMENTS OF THE WORK** on this project with their own forces **AND** will complete **ALL ELEMENTS OF THIS PROJECT WITHOUT THE USE OF SUBCONTRACTORS, MATERIAL SUPPLIERS, OR PROVIDERS OF PROFESSIONAL SERVICES.**
- 12. Affidavit C or Affidavit D of the MWBE Participation Program as appropriate.
- 13. Identification of Minority Business Participation Form.
- 14. The Completed Technical Evaluation Form.

****FAILURE TO SUBMIT THE ABOVE FORMS WITH THE BID FORM MAY BE JUST CAUSE FOR REJECTION OF THE BID BY THE OWNER****

SECTION 00300

BID FORM

PROJECT IDENTIFICATION:

LEGION HILLS OUTFALL AND NEW PINWOOD DRIVE LIFT STATION

CONTRACT IDENTIFICATION & NUMBER:

Bid Request: Legion Hills Outfall and New Pinewood Drive Lift Station

THIS BID IS SUBMITTED TO:

Fayetteville Public Works Commission
PWC Operations and Maintenance Center
955 Old Wilmington Road
Fayetteville, North Carolina 28301

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with Owner in the form included in the Contract Documents to perform and furnish all Work specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.
2. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including, without limitation, those dealing with the disposition of payment and performance bonds, insurance certificates. This bid will remain open for 90 days after the day of Bid opening. Bidder will sign the Contract and submit the Contract Security and other documents required by the Contract Documents within ten (10) days after the date of receipt by the Bidder.
3. In submitting this Bid, Bidder represents, as more fully set forth in the Contract, that:
 - a. Bidder has examined copies of all the Contract Documents and of the following addenda, receipt of all which is acknowledged on the bid summary page:
 - b. Bidder has examined the site and locality where the Work is to be performed, the legal requirements (federal, state, and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress of performance of the work and has made such independent investigations as Bidder deems necessary.
 - c. Bidder acknowledges that Owner and Design Engineer do not assume responsibility for the accuracy of dimensions or completeness of information and data shown or indicated in the Bid Documents with respect to existing facilities.
 - d. Bidder has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site of the Work (except underground facilities) and all drawings of physical conditions in or relating to existing surface or subsurface structures, pipelines, and utilities at or contiguous to the site which may have been identified in the Contract Documents. Bidder acknowledges that the Owner and Design Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bid Documents with respect to underground facilities at or contiguous to the site of Work. Bidder had obtained and carefully studied (or assumes responsibility for have done so) all such additional or supplementary examinations investigations, explorations, tests, studies, and data that are necessary to identify and understand conditions (surface, subsurface, and

underground facilities) at or contiguous to the site of Work or otherwise which may affect cost, progress, performance, or furnishing the Work or which relate to any aspect of means, methods, techniques, sequences, and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto. Bidder waives all rights to claim that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the proper submission of the Bid for the performance and furnishing of the Work in accordance with the Contract Time, Contract Price, and other terms and conditions of the Contract Documents.

- e. Bidder hereby certifies that, if awarded the Contract for construction of the Project, he will take all possible actions to minimize costs to the Owner which are related to any disruptions in any part of the Work resulting from unforeseeable conditions which may be encountered and work changes or additions which may be made.
- f. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, exploration, tests, studies, and data with the Contract Documents.
- g. Bidder has given Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Contract Documents and the written resolution thereof by Design Engineer is acceptable to Bidder, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.
- h. By bidding in response to this invitation, the Bidder represents that in the preparation and submission of this Bid, said Bidder did not, either directly or indirectly, enter into any combination or arrangement with any person, firm or corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1).
- i. Bid form must be completed in blue or black ink or by typewriter. The Lump Sum Bid on the form must be stated in both words and numerals. In case of a conflict, words shall take precedence.
- j. Bidder understands that the award of contract will be made on the basis of the total Bid amount which will be determined as (Total Combined Bid Contract 1 + Bid Contract 2), or (Total Combined Bid Contract 2 + Total Bid Contract 3) or separately (Total Bid Contract 1 or 3) and separately (Total Bid Contract 2). The intent is to allow for separate contractors for Contract 1 and Contract 2 or separate contractors for Contract 2 and Contract 3 or single contractor for combined Contract 1 and 2 or single contractor for combined Contract 2 and 3. Contractors submitting bids for Contract 1 & 2 or Contract 2 & 3 may include an optional deduct for award of the entire project as a single contract as indicated on the Bid Form. The deduct shall be subtracted from the Total Bid for Contract 1 and 2 combined or Contract 2 and 3 combined.
- k. Bidder shall complete the Work for the price indicated on the following pages.

Item No.	Ref. No.	Item	Estimated Quantities	Unit	Unit Price	Cost Extension
		CONTRACT #1 - GRAVITY SANITARY SEWER OUTFALL				
D-1	G-1	Mobilization and Demobilization @ Lump Sum	1	LS		
D-2	G-2	Traffic Control & Traffic Plan @ Lump Sum	1	LS		
D-3	G-3	Erosion & Sediment Control @ Lump Sum	1	LS		
D-4	G-5	Clearing & Grubbing, Permanent Easements @ per acre	6.61	AC		
D-5	G-6	Clearing & Grubbing, Temporary Easements @ per acre	1.90	AC		
D-6	G-7	Sod (No Overage Allowed) @ per square yard	3,801	SY		
D-7	G-8	Seeding (No Overage Allowed) @ per acre	6.59	AC		
D-8	G-8	Seed Wetlands @ per acre	1.72	AC		
D-9	G-9	French Drains @ per linear foot	200	LF		
D-10	D-2	8" CL 50 DI Sanitary Sewer 0'-6' Depth @ per linear foot	187	LF		
D-11	D-2	8" CL 50 DI Sanitary Sewer 6'-8' Depth @ per linear foot	58	LF		
D-12	D-2	8" CL 50 DI Sanitary Sewer 8'-10' Depth @ per linear foot	98	LF		
D-13	D-2	8" CL 50 DI Sanitary Sewer 10'-12' Depth @ per linear foot	9	LF		
D-14	D-2	12" CL 50 DI Sanitary Sewer 0'-6' Depth @ per linear foot	928	LF		
D-15	D-2	12" CL 50 DI Sanitary Sewer 6'-8' Depth @ per linear foot	2,457	LF		

D-16	D-2	12" CL 50 DI Sanitary Sewer 8'-10' Depth @	per linear foot	2,469	LF	
D-17	D-2	12" CL 50 DI Sanitary Sewer 10'-12' Depth @	per linear foot	925	LF	
D-18	D-2	12" CL 50 DI Sanitary Sewer 12'-14' Depth @	per linear foot	651	LF	
D-19	D-2	12" CL 50 DI Sanitary Sewer 14'-16' Depth @	per linear foot	1,093	LF	
D-20	D-2	12" CL 50 DI Sanitary Sewer 16'-18' Depth @	per linear foot	738	LF	
D-21	D-2	12" CL 50 DI Sanitary Sewer 18'-20' Depth @	per linear foot	275	LF	
D-22	D-2	12" CL 50 DI Sanitary Sewer 20'-22' Depth @	per linear foot	565	LF	
D-23	D-2	12" CL 50 RJDI Sanitary Sewer 0'-6' Depth @	per linear foot	4	LF	
D-24	D-2	12" CL 50 RJDI Sanitary Sewer 6'-8' Depth @	per linear foot	6	LF	
D-25	D-2	12" CL 50 RJDI Sanitary Sewer 12'-14' Depth @	per linear foot	10	LF	
D-26	D-2	12" CL 50 RJDI Sanitary Sewer 14'-16' Depth @	per linear foot	33	LF	
D-27	D-2	12" CL 50 RJDI Sanitary Sewer 16'-18' Depth @	per linear foot	6	LF	
D-28	D-18	Bore & Jack 30" Steel Casing w/ 12" Restrained DIP Carrier Pipe @	per linear foot	506	LF	
D-29	D-3	Sanitary Sewer Manhole 5' Dia 14'-16' Depth @	each	1	EA	
D-30	D-3	Sanitary Sewer Manhole 5' Dia 16'-18' Depth @	each	1	EA	
D-31	D-3	Sanitary Sewer Manhole 5' Dia 18'-20' Depth @	each	1	EA	
D-32	D-4	Sanitary Sewer Doghouse Manhole 5' Dia 10'-12' Depth @	each	1	EA	

D-33	D-4	Sanitary Sewer Doghouse Manhole 5' Dia 12'-14' Depth @	each	1	EA	
D-34	D-3	Sanitary Sewer Manhole 4' Dia 0'-6' Depth @	each	2	EA	
D-35	D-3	Sanitary Sewer Manhole 4' Dia 6'-8' Depth @	each	7	EA	
D-36	D-3	Sanitary Sewer Manhole 4' Dia 8'-10' Depth @	each	19	EA	
D-37	D-3	Sanitary Sewer Manhole 4' Dia 10'-12' Depth @	each	10	EA	
D-38	D-3	Sanitary Sewer Manhole 4' Dia 12'-14' Depth @	each	5	EA	
D-39	D-3	Sanitary Sewer Manhole 4' Dia 14'-16' Depth @	each	8	EA	
D-40	D-3	Sanitary Sewer Manhole 4' Dia 16'-18' Depth @	each	3	EA	
D-41	D-3	Sanitary Sewer Manhole 4' Dia 18'-20' Depth @	each	1	EA	
D-42	D-3	Sanitary Sewer Manhole 4' Dia 22'-24' Depth @	each	1	EA	
D-43	D-5	4" Interior Drop Structure @	each	1	EA	
D-44	D-5	6" Interior Drop Structure @	each	1	EA	
D-45	D-5	8" Interior Drop Structure @	each	1	EA	
D-46	D-17	Abandon Exist. SS Manhole @	each	6	EA	
D-47	D-16	Fill Ex. 8" SS with Grout @	linear feet	1,043	LF	
D-48	D-7	4" DIP Sanitary Sewer Lateral @	each	2	EA	
D-49	D-7	6" DIP Sanitary Sewer Lateral @	each	1	EA	

Bid Form

00300-5

LEGION HILLS OUTFALL AND
NEW PINEWOOD DRIVE LIFT STATION

D-50	D-9	8" Connection to Existing Structures	each	2	EA	
D-51	D-19	Retrofit Cam Lock Ring & Cover to Exist MH	each	3	EA	
D-52	D-20	Remove/Replace Concrete Sidewalk	per square yard	2	EA	
D-53	A-4	Remove/Replace Gravel Driveway	per square yard	19	SY	
D-54	B-1	Remove/Replace Storm Drain Drop Inlet at STA 77+84	each	1	EA	
D-55	B-1	Remove/Replace 42" RCP Storm Drain Near STA 77+84 (Includes 6" #57 Stone Bedding)	per linear foot	24	LF	
D-56	B-2	Rip Rap w/ Fabric (64+00 Prof. "A" & 2+73 Prof. "C")	per square yard	118	SY	
D-57	D-10	Concrete Anti-seep Collars for 8" DIP	each	1	EA	
D-58	D-10	Concrete Anti-seep Collars for 12" DIP	each	21	EA	
D-59	D-29	Demo Town & Country Lift Station	LS	1	LS	
D-60	D-30	Convert Legion Hills L.S. To MH	each	1	EA	
D-61	D-12	Testing	per linear foot	11,018	LF	
D-62	D-11	Undercut Excavation	per cubic yard	816	CY	
		TOTAL CONTRACT #1 - GRAVITY SANITARY SEWER OUTFALL				

Item No.	Ref. No.	Item	Estimated Quantities	Unit	Unit Price	Cost Extension
		CONTRACT #2 - NEW PINEWOOD LIFT STATION & FORCE MAIN				
D-1	G-1	Mobilization and Demobilization @ Lump Sum	1	LS		
D-2	G-2	Traffic Control & Traffic Plan @ Lump Sum	1	LS		
D-3	G-3	Erosion & Sediment Control @ Lump Sum	1	LS		
D-4	G-5	Clearing & Grubbing, Permanent Easements @ per acre	0.98	AC		
D-5	G-7	Sod (No Overage Allowed) @ per square yard	1,888	SY		
D-6	G-8	Seeding (No Overage Allowed)(Easements) @ per acre	1.04	AC		
D-7	G-8	Seed Wetlands @ per acre	0.13	AC		
D-8	G-9	French Drains @ per linear foot	200	LF		
D-9	D-3	Sanitary Sewer Manhole 4' Dia 10'-12' Depth @ each	1	EA		
D-10	D-2	12" DIP Sanitary Sewer (Gravity) 10'-12' Depth @ per linear foot	26	LF		
D-11	D-2	12" DIP Sanitary Sewer (Gravity) 12'-14' Depth @ per linear foot	48	LF		
D-12	D-22	12" CL 50 DI Sewer Force Main 0'-6' Depth @ per linear foot	2,190	LF		
D-13	D-22	12" CL 50 DI Sewer Force Main 6'-8' Depth @ per linear foot	1,389	LF		
D-14	D-18	Bore & Jack 24" Steel Casing w/ 12" Restrained DIP Carrier Pipe @ per linear foot	59	LF		
D-15	D-25	Air Relief and Vacuum Valve @ each	1	EA		

D-16	D-10	Anti-Seep Collar For 12" D.I.P. @	each	2	EA		
D-17	D-12	Testing Force Main & Gravity SS @	per linear foot	3,712	LF		
D-18	D-11	Undercut Excavation @	per cubic yard	270	CY		
D-19	D-13	Submersible Lift Station @	LS	1	LS		
D-20	D-14	Remote Telemetry System @	LS	1	LS		
D-21	D-15	Lift Station Standby Power @	LS	1	LS		
D-22	D-31	Demo Pinewood Lift Station and convert to manhole @	LS	1	LS		
		TOTAL CONTRACT #2 - NEW PINEWOOD LIFT STATION & FORCE MAIN					

Item No.	Ref. No.	Item	Estimated Quantities	Unit	Unit Price	Cost Extension
		CONTRACT #3 - ALTERNATE BID - PIPE BURSTING & GRAVITY SANITARY SEWER				
D-1	G-1	Mobilization and Demobilization @ Lump Sum	1	LS		
D-2	G-2	Traffic Control & Traffic Plan @ Lump Sum	1	LS		
D-3	G-3	Erosion & Sediment Control @ Lump Sum	1	LS		
D-4	G-5	Clearing & Grubbing, Permanent Easements @ per acre	3.90	AC		
D-5	G-6	Clearing & Grubbing, Temporary Easements @ per acre	1.39	AC		
D-6	G-7	Sod (No Overage Allowed) @ per square yard	3,801	SY		
D-7	G-8	Seeding (No Overage Allowed)(Easements) @ per acre	5.63	AC		
D-8	G-8	Seed Wetlands @ per acre	1.21	AC		
D-9	G-9	French Drains @ per linear foot	200	LF		
D-10	D-26	Remove Ex. 8" Sanitary Sewer 6'-8' Depth @ per linear foot	34	LF		
D-11	D-26	Remove Ex. 8" Sanitary Sewer 8'-10' Depth @ per linear foot	18	LF		
D-12	D-26	Remove 8" Sanitary Sewer 12'-14' Depth @ per linear foot	14	LF		
D-13	D-2	8" CL 50 DI Sanitary Sewer 0'-6' Depth @ per linear foot	187	LF		
D-14	D-2	8" CL 50 DI Sanitary Sewer 6'-8' Depth @ per linear foot	58	LF		
D-15	D-2	8" CL 50 DI Sanitary Sewer 8'-10' Depth @ per linear foot	74	LF		

Bid Form

00300-9

LEGION HILLS OUTFALL AND
NEW PINEWOOD DRIVE LIFT STATION

D-16	D-1	12" CL 50 DI Sanitary Sewer 0'-6' Depth @	per linear foot	716	LF	
D-17	D-1	12" CL 50 DI Sanitary Sewer 6'-8' Depth @	per linear foot	1580	LF	
D-18	D-2	12" CL 50 DI Sanitary Sewer 8'-10' Depth @	per linear foot	1529	LF	
D-19	D-2	12" CL 50 DI Sanitary Sewer 10'-12' Depth @	per linear foot	887	LF	
D-20	D-2	12" CL 50 DI Sanitary Sewer 12'-14' Depth @	per linear foot	670	LF	
D-21	D-2	12" CL 50 DI Sanitary Sewer 14'-16' Depth @	per linear foot	1075	LF	
D-22	D-2	12" CL 50 DI Sanitary Sewer 16'-18' Depth @	per linear foot	784	LF	
D-23	D-2	12" CL 50 DI Sanitary Sewer 18'-20' Depth @	per linear foot	275	LF	
D-24	D-2	12" CL 50 DI Sanitary Sewer 20'-22' Depth @	per linear foot	565	LF	
D-25	D-2	12" CL 50 RJDJ Sanitary Sewer 0'-6' Depth @	per linear foot	4	LF	
D-26	D-2	12" CL 50 RJDJ Sanitary Sewer 6'-8' Depth @	per linear foot	6	LF	
D-27	D-2	12" CL 50 RJDJ Sanitary Sewer 12'-14' Depth @	per linear foot	10	LF	
D-28	D-2	12" CL 50 RJDJ Sanitary Sewer 14'-16' Depth @	per linear foot	33	LF	
D-29	D-2	12" CL 50 RJDJ Sanitary Sewer 16'-18' Depth @	per linear foot	6	LF	
D-30	D-28	Pipe Burst Exist. 8" SS to 12" RJDIP @	per linear foot	1,845	LF	
D-31	D-18	Bore & Jack 30" Steel Casing w/ 12" Restrained DIP Carrier Pipe @	per linear foot	506	LF	
D-32	D-16	Fill Ex. 8" SS with Grout @	per linear foot	257	LF	

D-33	D-27	Remove Sanitary Sewer Manhole 4' Dia. 0'-6' Depth @	each	1	EA	
D-34	D-27	Remove Sanitary Sewer Manhole 4' Dia. 6'-8' Depth @	each	3	EA	
D-35	D-27	Remove Sanitary Sewer Manhole 4' Dia. 8'-10' Depth @	each	4	EA	
D-36	D-27	Remove Sanitary Sewer Manhole 4' Dia. 10'-12' Depth @	each	3	EA	
D-37	D-27	Remove Sanitary Sewer Manhole 4' Dia. 12'-14' Depth @	each	2	EA	
D-38	D-3	Sanitary Sewer Manhole 5' Dia 14'-16' Depth @	each	1	EA	
D-39	D-3	Sanitary Sewer Manhole 5' Dia 16'-18' Depth @	each	1	EA	
D-40	D-3	Sanitary Sewer Manhole 5' Dia 18'-20' Depth @	each	1	EA	
D-41	D-4	Sanitary Sewer Doghouse Manhole 5' Dia 10'-12' Depth @	each	1	EA	
D-42	D-4	Sanitary Sewer Doghouse Manhole 5' Dia 12'-14' Depth @	each	1	EA	
D-43	D-3	Sanitary Sewer Manhole 4' Dia 0'-6' Depth @	each	2	EA	
D-44	D-3	Sanitary Sewer Manhole 4' Dia 6'-8' Depth @	each	8	EA	
D-45	D-3	Sanitary Sewer Manhole 4' Dia 8'-10' Depth @	each	16	EA	
D-46	D-3	Sanitary Sewer Manhole 4' Dia 10'-12' Depth @	each	7	EA	
D-47	D-3	Sanitary Sewer Manhole 4'Dia 12'-14' Depth @	each	7	EA	
D-48	D-3	Sanitary Sewer Manhole 4'Dia 14'-16' Depth @	each	8	EA	
D-49	D-3	Sanitary Sewer Manhole 4'Dia 16'-18' Depth @	each	4	EA	

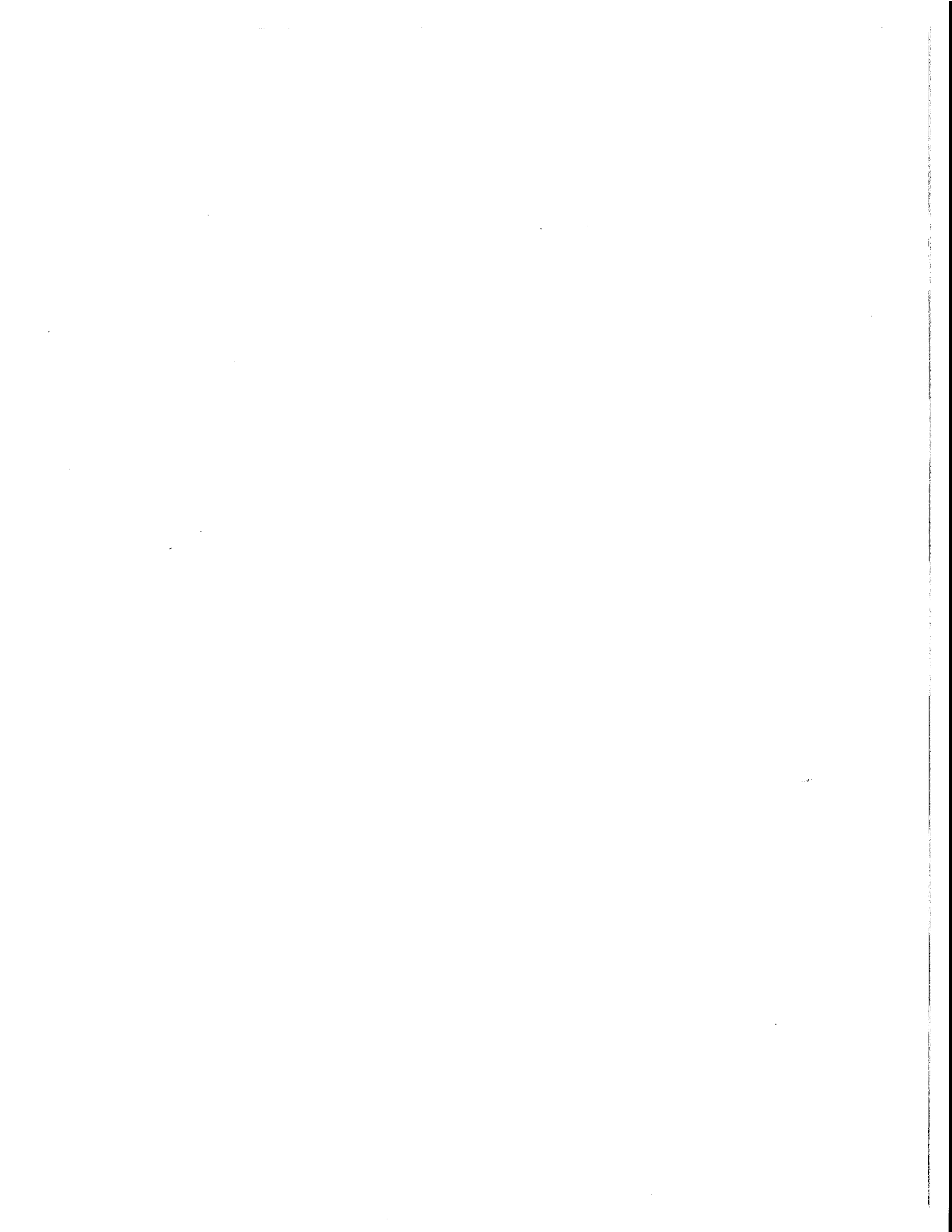
D-50	D-3	Sanitary Sewer Manhole 4'Dia 18'-20' Depth @	each	1	EA	
D-51	D-3	Sanitary Sewer Manhole 4'Dia 22'-24' Depth @	each	1	EA	
D-52	D-5	4" Interior Drop Structure @	each	1	EA	
D-53	D-5	6" Interior Drop Structure (73+78) @	each	1	EA	
D-54	D-5	8" Interior Drop Structure (83+11) @	each	1	EA	
D-55	D-7	4" DIP Sanitary Sewer Lateral @	each	2	EA	
D-56	D-7	6" DIP Sanitary Sewer Lateral @	each	1	EA	
D-57	D-9	8" Connection to New SS Manholes (4+90,13+48,17+66 & 2X @ 22+01) @	each	5	EA	
D-58	D-8	Ex. 4" SS Lateral Connection to New 12" RJDIP @	each	5	EA	
D-59	D-19	Retrofit Cam Lock Ring & Cover to Exist MH @	each	3	EA	
D-60	D-20	Remove/Replace Concrete Sidewalk @	per square yard	59	SY	
D-61	A-4	Remove/Replace Gravel Driveway @	per square yard	19	SY	
D-62	D-17	Abandon Ex. MH @ Approx. STA 9+18 @	each	1	EA	
D-63	D-29	Demo Town & Country Lift Station @	LS	1	LS	
D-64	D-30	Convert Legion Hills L.S. To MH @	each	1	EA	
D-65	B-1	Remove/Replace Storm Drain Drop Inlet at STA 77+84 @	each	1	EA	

D-66	B-1	Remove/Replace 42" RCP Storm Drain Near STA 77+84 (Includes 6" #57 Stone Bedding) @	24	LF		
D-67	B-2	Rip Rap Drainage Feature (64+00) @	86	SY		
D-68	D-10	Concrete Anti-seep Collars for 8" DIP @	1	EA		
D-69	D-10	Concrete Anti-seep Collars for 12" DIP @	12	EA		
D-70	D-12	Testing @	10,810	LF		
D-71	B-3	Undercut Excavation @	800	CY		
		TOTAL CONTRACT #3 - ALTERNATE BID - PIPE BURSTING & GRAVITY SANITARY SEWER				

Bid Form

00300-13

LEGION HILLS OUTFALL AND
NEW PINEWOOD DRIVE LIFT STATION



- BID SUMMARY -

CONTRACT #1 GRAVITY SANITARY SEWER OUTFALL	\$ _____
CONTRACT #2 NEW PINEWOOD LIFT STATION & FORCE MAIN	\$ _____
COMBINED CONTRACT #1 AND CONTRACT #2	\$ _____
CONTRACT #3 ALTERANTE BID – PIPE BURSTING & GRAVITY SANITARY SEWER	\$ _____
COMBINED CONTRACT #3 & CONTRACT #2	\$ _____
OPTIONAL – DEDUCT IF A AWARDED ENTIRE PROJECT (CONTRACT 1 & 2)	\$ _____
OPTIONAL – DEDUCT IF A AWARDED ENTIRE PROJECT (CONTRACT 3 & 2)	\$ _____

The Bidder has received, acknowledged, and used the following addenda in completing the Bid. (Initial and Date as appropriate).

Addendum No. 1 _____	Dated _____
Addendum No. 2 _____	Dated _____
Addendum No. 3 _____	Dated _____
Addendum No. 4 _____	Dated _____
Addendum No. 5 _____	Dated _____

The undersigned Bidder certifies that they are a licensed as a Contractor under the provisions of the Act of North Carolina Legislature, Session 1952 as amended regulating the practice of General Contracting, and that their license number is _____ (License Number).

The undersigned Bidder hereby agrees to accept an award of the Contract based on the Total Contract Amount as accepted by the Owner and as indicated on the Notice of Award.

4. Bidder agrees that Work shall be completed within the time frame indicated in the Agreement as follow:
 - a. All work described herein to be complete, including restoration and all punchlist items within **240** consecutive calendar days from the start date stipulated on the Notice to Proceed.
 - b. The Bidder acknowledges that time is of the essence in this Contract and that the Owner will suffer financial loss if the Work is not complete within the time specified in Paragraph 4.a above plus any extensions thereof allowed in accordance with Article 11 of the General Conditions. Bidder also recognizes the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by the Owner if the Work is not complete on time. Accordingly, instead of requiring any such proof, the Owner and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the Owner \$1,000.00 per calendar day for each day that expires after the time specified in Paragraph 4.a, plus any proper time extension, until the Work is finally complete.
5. The following documents are attached to and made part of this bid:
 - a. Required Bid Security in the form of either a cashier's check or certified check or Bid Bond in the amount of 5% of maximum Bid price.
6. Communications concerning this Bid shall be addressed to:
(Contractor's Name, Address and Telephone Number)

7. The terms used in this Bid which are defined in the General Conditions of the Contract Documents have the meanings assigned to them therein, which are incorporated by reference as if fully set forth herein.
8. An individual Contractor is required to furnish his social security number and sole proprietorship, partnership and corporation are required to furnish their employer identification numbers to the Public Works Commission. Please indicate this information on this Bid Form as follows:

Social Security Number: _____

Federal Employer Identification Number: _____

SUBMITTED ON _____, 20____.

AN INDIVIDUAL

BY _____ (SEAL)
(Individual's Name and Signature)

Doing Business as: _____

North Carolina Contractor Registration Number: _____

Business Address: _____

Phone Number: _____

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

NOTARY PUBLIC

My Commission Expires:

A PARTNERSHIP

BY _____ (SEAL)
(Firm Name)

(General Partner and Signature)

North Carolina Contractor Registration Number: _____

Business Address: _____

Phone Number: _____

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

NOTARY PUBLIC

My Commission Expires:

A CORPORATION

BY _____ (SEAL)
(Corporation Name)

(State of Incorporation)

BY _____
(Name and Title of Person Authorized to Sign and Signature)

(Corporate Seal)

ATTEST: _____
(Secretary or Assistant Secretary and Signature)

North Carolina Contractor Registration Number: _____

Business Address: _____

Phone Number: _____

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

NOTARY PUBLIC

My Commission Expires: _____

A JOINT VENTURE

BY _____
(Name and Signature)

North Carolina Contractor Registration Number: _____

Business Address: _____

Phone Number: _____

BY _____
(Name and Signature)

North Carolina Contractor Registration Number: _____

Business Address: _____

Phone Number: _____

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

NOTARY PUBLIC

My Commission Expires: _____

(Each joint venturer must sign. The name of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

List of Subcontractors

In compliance with the Instructions to Bidders and the General Conditions, the undersigned submits the following names of Subcontractors to be used in performing the Work.

The Bidder certifies that all Subcontractors listed are eligible to perform the Work and that all Subcontractors performing more than five percent of the work are listed.

Subcontractor's Work

Subcontractor's Name

NOTE: This form shall be submitted with Bid.

Bidder's Signature

BID BOND

This is a Bid Bond that is subject to the provisions of Article 3 of Chapter 44A of the North Carolina General Statutes.

This Bond is Executed on _____, 20_____.

The name of the PRINCIPAL is _____

The name of the SURETY is _____

The Fayetteville Public Works Commission is the Owner

The amount of the Bond is _____

_____ (Dollars) (\$_____)

KNOW ALL MEN BY THESE PRESENTS, the Principal and Surety above named are hereby held and firmly bound unto the above named Owner hereinafter called the Owner in the penal sum of the amount stated above in lawful money of the United States, 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 Owner a certain Bid attached hereto and hereby made a part hereof to enter into a Contract in writing, for the construction of:

LEGION HILLS OUTFALL AND NEW PINWOOD DRIVE LIFT STATION

NOW, THEREFORE

- (a) If said Bid shall be rejected, or in the alternate,
- (b) 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 a bond for his faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection herewith, and shall in all other respects perform the agreement created by 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 state.

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

IN WITNESS WHEREOF, the Principal and the Surety have hereto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

ATTEST:

(Principal Secretary)
(SEAL)

Principal

BY: _____ (3)

(Address)

Witness as to Principal

Surety

(Address)

(Address)

ATTEST:

N.C. Resident Agent
(SEAL)

Witness as to Surety

(Address)

- (1) Correct name of Contractor
- (2) A Corporation, a Partnership or an Individual, as the case may be
- (3) If Contractor is a Partnership, all partners should execute bond

**POWER OF ATTORNEY
(Attach)**

CONTRACTOR'S CERTIFICATES
AFFIDAVIT OF ORGANIZATION AND AUTHORITY
SWORN STATEMENT

STATE OF _____)

COUNTY OF _____)

_____ being the first duly sworn on oath deposes and says that the Bidder on the attached Bid Form is organized as indicated below and that all statements herein made are made on behalf of such Bidder and that this deponent is authorized to make them.

(Fill Out Applicable Paragraph)

1. CORPORATION

The Bidder is a corporation organized and existing under the laws of the State of _____ and its President is _____, and its Secretary is _____, and does have a corporate seal. The _____ is authorized to sign construction Contract and Bids for the company by action of its Board of Directors taken _____, a certified copy of which is hereto attached. (Strike out last sentence if not applicable.)

2. PARTNERSHIP

The Bidder is a Partnership consisting of _____ and _____, partners doing business under the name of _____.

3. SOLE TRADER

The Bidder is an individual and if operating under a trade name, such trade name is as follows: _____

4. ADDRESS

The business address of the Bidder is as follows:

Its phone number is _____.

Bidder

By: _____

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

Notary Public County _____

My Commission Expires: _____

PERFORMANCE AND DELIVERY

LEGION HILLS OUTFALL AND NEW PINWOOD DRIVE LIFT STATION

Bid Receipt Date	Tuesday, September 26, 2017, 2:00 pm
Mandatory Pre-Bid Conference	Monday, August 28, 2017, 10:00 am
Expected Date of Availability	Tuesday, August 22, 2017
Contract Time/Duration	310 Consecutive Calendar Days
Liquidated Damages	\$1,000.00 per day for each day beyond the final completion date
Bid Acceptance Period	90 Calendar Days unless otherwise noted.

Questions regarding this bid shall be submitted in writing to the attention of Mark Cannady, Procurement Supervisor, by fax (910-483-1429) or via e-mail (mark.cannady@faypwc.com) no later than Friday, September 8, 2017 at 5:00 p.m. Bidders are expressly prohibited from contacting any PWC official or employee associated with this Request for Proposals, except as noted above. Violation of this prohibition is grounds for the immediate disqualification of the bidder. Any addenda to these Contract Documents will be issued by the Project Engineer no later than Monday, November 2, 2015 at 5:00 p.m.

PROJECT DESCRIPTION:

Construction of the proposed sanitary sewer system improvements Contract #1 to consist of approximately 352 lf of 8" sanitary sewer, 10,160 lf of 12" sanitary sewer, 506 lf of 30" steel casing, 60 manholes, grout fill 1,043 lf of 8" sanitary sewer and demo 2 lift stations. Contract #2 to consist of approximately 1 manhole, 74' of 12" sanitary sewer, 3,579 lf of 12" force main, 59 lf of 24" steel casing, demo 1 lift station and construct Duplex Submersible lift station. Contract #3 Alternate Bid pipe bursting and gravity sanitary sewer to consist of pipe bursting 1,845 lf of 8" sanitary sewer to 12" in lieu of a portion of Contract #1 Gravity Sewer remove 66 lf of 8" sanitary sewer, construct 319 lf of 8" sanitary sewer and 8,150 lf of 12" sanitary sewer, bore and jack 506 lf of steel casing, fill 257 lf of 8" sanitary sewer with grout, remove 13 manholes, install 59 manholes, demo lift station, convert lift station to manhole. All Contracts shall include clearing, grubbing, erosion control, seed, sod, restoration, traffic control, demolition and all incidentals necessary to complete the work.

NOTICE OF AWARD

TO: _____

PROJECT DESCRIPTION: LEGION HILLS OUTFALL AND NEW PINEWOOD DRIVE LIFT STATION

The Owner has considered the BID submitted by you for the above-described work in response to its Advertisement for Bids dated **May 20, 2013** and Information for Bidders.

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

You are required by the Information for Bidders to execute the Contract and furnish the required Contractor's Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date of this NOTICE to you.

If you fail to execute said Contract and to furnish said Bonds within ten (10) 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. The Owner 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_____.

Owner: FAYETTEVILLE PUBLIC WORKS COMMISSION
FAYETTEVILLE, NORTH CAROLINA

By: _____

Title: _____

ACCEPTANCE OF AWARD

LEGION HILLS OUTFALL AND NEW PINEWOOD DRIVE LIFT STATION

Receipt of the above NOTICE OF AWARD is hereby acknowledged this the _____ day of _____, 20____.

Contractor:

By: _____

Title: _____

CONTRACT
FOR
LEGION HILLS OUTFALL AND NEW PINEWOOD DRIVE LIFT STATION

The above contract being one required by law to be approved by the City Council of Fayetteville, said Council considered the same at a regular meeting at which a quorum was present, the _____ day of _____, 20 ____, and duly approved the same and authorized this endorsement on the contract.

This _____ day of _____, 20 ____.

THE CITY OF FAYETTEVILLE, NC

BY: _____

MAYOR

ATTEST:

CITY CLERK

CONTRACT

THIS CONTRACT, made this _____ day of _____, 2017,
by _____ hereinafter called **CONTRACTOR**, and the **City of Fayetteville, North Carolina**, by and through the **Fayetteville Public Works Commission**, hereinafter called **COMMISSION**.

WITNESSETH

THAT WHEREAS, a Contract for **LEGION HILLS OUTFALL AND NEW PINWOOD DRIVE LIFT STATION** has recently been awarded to Contractor by Commission, at and for a sum equal to the aggregate cost of the work to be done and labor, materials, equipment, apparatus, and supplies furnished at the prices and rates respectively named therefore in the Bid Form in the amount of \$ _____ attached hereto:

AND WHEREAS, it was provided in said award that a formal Contract would be executed by and between Contractor and Commission, evidencing the terms of said award, and that Contractor would commence the work to be performed under this agreement on a date to be specified in a written order by the Commission and will fully complete all work thereunder **by the end of the contract period**;

NOW, THEREFORE, Contractor doth hereby covenant and agree with Commission that it will well and faithfully perform and execute such work and furnish all labor, materials, equipment, apparatus and supplies, in accordance with the Plans, at and for a sum equal to the aggregate cost of the work done and labor, materials, equipment, apparatus and supplies furnished at the prices and rates respectively named therefore in the Bid Form attached hereto, and will well and faithfully comply with and perform each and every obligation imposed upon it by said Plans and Specifications and terms of said award.

Contractor shall promptly make payments to all persons supplying materials in the prosecution of the work, and to all laborers and others employed thereon.

Contractor shall be responsible for all damages to the property of the City of Fayetteville, North Carolina, that may be consequent upon the normal procedure of its work or that may be caused by or result from the negligence of Contractor, its employees or agents, during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. Contractor must restore all property so injured to a condition as good as it was when Contractor entered upon the work.

Contractor shall furthermore be responsible for and required to make good at its expense any and all damages of whatever nature to persons or property, arising during the period of the Contract, caused by carelessness, neglect or workmen. Contractor shall also indemnify and save harmless Commission and The City of Fayetteville, North Carolina, and the Officers and agents thereof from all claims, suits, and proceedings of every name and description which may be brought against Commission or The City of Fayetteville, North Carolina, or the Officers and agents thereof, for or on account of any injuries or damages to persons or property received or sustained by any person or persons, firm, or corporation, or by or in consequence of any materials used in said work or by or on account of any improper material or workmanship in its construction, or by or on account of any accident, or of any other act of omission of Contractor, its agents, employees, servants or workmen.

It is agreed and understood that the Advertisement for Bids, Definitions, Instructions to Bidders, General Conditions, Supplementary Conditions, General Specifications, Material Specifications, Detail Specifications, the accepted Bid Form, and the enumerated Addenda and drawings are parts and parcels of this Contract, to the same as it incorporated herein in full.

It is further mutually agreed that, if, at any time after the execution of this agreement and the Surety Bond hereto attached for its faithful performance and payment, Commission shall deem the Surety or Sureties upon such Bond to be unsatisfactory, or if for any reason, such Bond ceases to be adequate to cover the performance and/or payment of the work, Contractor shall, at its expense, within five (5) days after the receipt of notice from Commission so to do, furnish an additional Bond or Bonds in such form and amount, and with such Surety or Sureties as shall be satisfactory to Commission. In such event no further payment to Contractor shall be deemed to be due under this agreement until new or additional security for the faithful performance and payment of the work shall be furnished in manner and form satisfactory to Commission.

And Commission doth hereby covenant and agree with Contractor that it will pay to Contractor, when due and payable under the terms of said Specifications and said award, the above mentioned sum, and that it will well and faithfully comply with and perform each and every obligation imposed upon it by said Specifications and the terms of said award.

It is further agreed that the Contractor shall, upon each pay request under this Contract, furnish to Commission invoices or copies of invoices for all materials purchased for said work within pay request period, and such invoices shall state the amount of North Carolina Sales Tax paid for said materials; and Contractor shall also furnish Commission an affidavit certifying the total costs of materials purchased for all work performed within pay request period under this Contract and the total amount of North Carolina Sales Tax paid for said materials.

Contractor hereby acknowledges that "E-Verify" is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. Contractor further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must use E-Verify and, after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS § 64-26(a).

Contractor hereby pledges, attests and warrants through execution of this Agreement that Contractor complies with the requirements of Article 2, Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that any subcontractors currently employed by or subsequently hired by Contractor shall comply with any and all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Agreement.

As mandated by N.C.G.S. 147-86.59(a), Contractor hereby certifies that it is not listed on the Final Divestment List created by the North Carolina State Treasurer pursuant to N.C.G.S. 147-86.58. Contractor further certifies that in accordance with N.C.G.S. 147-86.59(b) that it shall not utilize any subcontractor found on the State Treasurer's Final Divestment List. Contractor certifies that the signatory to this Agreement is authorized by the Contractor to make the foregoing statement.

Whenever used herein, the singular shall include the plural, the plural singular, and the use of any genders shall be applicable to all genders as the context may require.

IN TESTIMONY WHEREOF, Contractor and Commission have duly signed and sealed this Contract.

(Corporate Seal)

CONTRACTOR NAME
(SEAL)

BY: _____

ATTEST:

TITLE: _____

Secretary

CITY OF FAYETTEVILLE, by and through
Fayetteville Public Works Commission

ATTEST:

By: _____

Clerk of City Council

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

Chief Financial Officer

This is to certify that I have examined the attached contract documents, that after such examination I am of the opinion that such documents conform to the laws of the State of North Carolina, that the execution of such contract and the contract bonds of CONTRACTOR NAME are in due and proper form and that the foregoing agreements constitute valid and binding obligations on such parties.

Attorney for the City of Fayetteville, NC

PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____

Name/Address of Principal: _____

Name/Address of Surety: _____

Name of Contracting
Body: Fayetteville Public Works Commission

Amount of Bond (Printed): _____

PROJECT: LEGION HILLS OUTFALL AND NEW PINEWOOD DRIVE LIFT STATION

KNOW ALL MEN BY THESE PRESENTS, That We, the Principal and Surety above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these present.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal entered into a certain Contract with the Contracting Body, identified as shown above and hereto attached.

NOW, THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term of said Contract and any extensions there of that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any Guaranty required under the Contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

(Proprietorship or Partnership)

ATTEST: (Corporation)

By: _____

Title: _____
(Corporate Secretary or Assistant Secretary, Only)

Witness:

Countersigned:

N.C. Licensed Resident Agent

(Name and Address – Surety Agency)

(Surety Company Name and NC Regional
Or Branch Office Address)

Contractor:

(Contractor: Trade or Corporate Name)

By: _____

Title: _____
(Owner, Partner, or Corporate President or
Vice President, Only)

(CORPORATE SEAL)

SURETY COMPANY:

By: _____

Title: _____
(Attorney in Fact)

(SURETY CORPORATE SEAL)

PAYMENT BOND

Date of Contract: _____

Date of Execution: _____

Name/Address of Principal: _____

Name/Address of Surety: _____

Name of Contracting
Body: Fayetteville Public Works Commission

Amount of Bond (Printed): _____

Project: LEGION HILLS OUTFALL AND NEW PINEWOOD DRIVE LIFT STATION

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal entered into a certain Contract with the Contracting Body, identified as shown above and hereto attached.

NOW, THEREFORE, if the Principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said Contract, and any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

(Proprietorship or Partnership)

ATTEST: (Corporation)

By: _____

Title: _____
(Corporate Secretary or Assistant Secretary, Only)

Witness:

Countersigned:

N.C. Licensed Resident Agent

(Name and Address – Surety Agency)

(Surety Company Name and NC Regional
Or Branch Office Address)

Contractor:

(Contractor: Trade or Corporate Name)

By: _____

Title: _____
(Owner, Partner, or Corporate President or
Vice President, Only)

(CORPORATE SEAL)

SURETY COMPANY:

By: _____

Title: _____
(Attorney in Fact)

(SURETY CORPORATE SEAL)

CERTIFICATES OF INSURANCE
(ATTACH)

POWER OF ATTORNEY
(ATTACH)

NOTICE TO PROCEED

TO: _____

DATE: _____

PROJECT: LEGION HILLS OUTFALL
AND NEW PINWOOD DRIVE LIFT
STATION

You are hereby notified to commence work in accordance with the Contract dated on the _____
day of _____, 20____ on the _____ day of _____, 20____,
and you are to complete all work within **310** consecutive calendar days thereafter.

The date of Final Completion therefore is _____.

Fayetteville Public Works Commission
Owner

By: _____

Gloria Wrench
Purchasing Manager

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED
is hereby acknowledged this _____ day of _____, 20____.

Contractor

By: _____

Title: _____

00600 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. The Following Terms will be used throughout these Contract Documents.

1. **Addenda** - Written or graphic instruments issued prior to the opening of Bids, which clarify, correct, or change the Bidding Requirements or the Contract Documents.
2. **Application for Payment** - The form acceptable to Owner which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
3. **Bid** - The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
4. **Bidder** - The person, firm, or corporation who submits a Bid for Work directly to Owner.
5. **Bidding Documents** - The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).
6. **Bidding Requirements** - The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.
7. **Bonds** – Bid, Performance, and Payment bonds and other instruments of security.
8. **Change In Work Delays** - Delays due to changes in the Work that alters the original scope of the Contract and impacts the critical path (delays the controlling operation).
9. **Change Order** - A document recommended by Project Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Contract.
10. **Change Order Request (COR)** - A written document submitted by the Contractor requesting an adjustment to the Contract sum or an extension of the Contract time for approval by the Owner.
11. **Claim** - A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
12. **Claim (Property Damage)** - Any form of injury or damage caused to the property, either personal or real due to the negligence of the Contractor as detailed by claimant.
13. **Contract** - The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

14. **Contract Documents** - The combined bid documents (Instructions to Bidders, Special Provisions, etc.), technical specifications, contract drawings, and all addenda. Shop drawing submittals and the reports and drawings referred to Paragraphs 4.02 are not Contract Documents.
15. **Contract Price** - The monies payable by Owner to Contractor for completion of the Work in accordance with the CONTRACT and all executed Change Orders.
16. **Contract Time** - The number of days or the dates stated in the Contract to complete the Work so that it is ready for final payment as evidenced by Project Engineer written recommendation of final payment.
17. **Contractor** - The individual or entity with whom Owner has entered into the Contract.
18. **Critical Path** - The sequence of activities in the schedule for which an adjustment in the duration of any activity results in a corresponding adjustment in the overall schedule duration.
19. **Drawings** - The drawings which show the scope, extent and character of the Work to be furnished and performed by Contractor and which have been prepared or approved by Project Engineer and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.
20. **Day** - The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.
21. **Defective** - The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to Project Engineer recommendation of final payment.
22. **Design Engineer** - The Engineering firm identified on the Contract Drawings and their duly authorized agents, such agents acting within the scope of the particular duties entrusted to them in each case.
23. **Design Engineer's Consultant** - An individual or entity having a Contract with Design Engineer to furnish services as Design Engineer's independent professional associate or consultant with respect to the Project.
24. **Effective Date of the Contract** - The date indicated in the Contract on which it becomes effective.
25. **Excusable Delay** - Any delay beyond the control and without the fault or negligence of Contractor caused by events or circumstances such as, but not limited to, acts of God or of public enemy, acts of government other than Owner, fires, floods, epidemics, quarantine restrictions, freight embargoes, hurricanes, tornadoes, unusually severe weather.
26. **Free Haul Limit** - area within 2 miles of the project limits, one way.
27. **Hazardous Environmental Condition** - The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

28. **Hazardous Waste** - The term Hazardous Waste shall have the meaning provided in the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
29. **Inexcusable Delay** - Any delay caused either by (A) events or circumstances within the control of Contractor, such as inadequate manpower, slow submittals, etc., which might have been avoided by the exercise of care, prudence, foresight, or diligence on the part of Contractor, or (B) labor disputes.
30. **Laws and/or Regulations** - Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
31. **Liens** - Charges, security interests, or encumbrances upon Project funds.
32. **Milestone** - A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Final Completion of all the Work.
33. **Notice of Award** - The written notice by Owner to the Bidder stating that upon timely compliance by the successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Contract.
34. **Notice to Proceed** - A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
35. **Non Compliance Notice (NCN)** - A written notice given by the Owner to Contractor indicting a violation in Contract Terms.
36. **Owner** - The public entity with whom Contractor has entered into the Contract and for whom the Work is to be provided. Owner is the City of Fayetteville, acting by and through its Public Works Commission, acting through its authorized representatives, primarily the Water Resources Engineering Department located at 955 Old Wilmington Road, Fayetteville, NC.
37. **Partial Utilization** - Use by Owner of a completed part of the Work for the purpose for which it is intended (or a related purpose) prior to completion of all the Work.
38. **Owner's Consultant** - An individual or entity having a Contract with the Owner to furnish services as the Owner's independent professional associate or consultant with respect to the Project.
39. **Project** - The Work to be performed under the Contract Documents.
40. **Project Coordinator** - The authorized representative of Project Engineer who may be assigned to the Site or any part thereof.
41. **Project Engineer** - Person assigned by Owner, to coordinate, manage, monitor, and shall administer the construction program working with Design Engineer on engineering questions concerning the Project. The Project Engineer has the authority to approve any changes in scope of Work.
42. **Recovery Plan** - Documentation submitted by the Contractor describing when a project is anticipated be completed to include revisions to schedule and additional workforce.

43. **Request for Information (RFI)** - A written document from the Contractor to the Project Engineer requesting clarification or information concerning the Contract Documents and/or the Contract Drawings.
44. **Request for Proposal (RFP)** - A written document from the Owner requesting the Contractor submit a proposal for work outside the scope of the Contract and its provisions.
45. **Samples** - Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
46. **Shop Drawings/Submittals** - All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
47. **Site** - Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
48. **Specifications** - That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.
49. **Subcontractor** - An individual or entity having a direct Contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
50. **Special Provisions** - That part of the Contract Documents which amends or supplements the Contract Documents.
51. **Supplier** - A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct Contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.
52. **Underground Facilities** - All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
53. **Weather Delays** - Delays that affect the standard daily production of the contract 50% or more as established by the submitted baseline schedule, or the accepted amended schedule.
54. **Work** - The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
55. **Work Change Directive** - Work initiated in the field affecting Contract Price and/or Contract Times. The Project Coordinator and/or Project Engineer may give Contractor a directive to proceed with Work which shall be included in a subsequent Change Order.

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination Project Engineer as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to Project Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of the Contract Documents.

B. Furnish, Install, Perform, Provide

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

- C. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

**DIVISION 1
GENERAL REQUIREMENTS**

00700 – GENERAL CONDITIONS

PART 1. PRELIMINARY MATTERS

1.01 Scope of Work

- A. The Contractor shall furnish all implements, machinery, tools, equipment, materials, labor, and all other incidentals necessary to perform the Work as required under the terms of these Contract Documents.

1.02 Performance and Payment Bonds

- A. The Contractor, at the time of the execution of the Contract shall be required to furnish a Performance Bond and Payment Bond in an amount equal to at least one-hundred percent (100%) of the Contract price as security for the faithful performance of this Contract and as security for the payment of all persons performing labor and furnishing materials and equipment in connection with this Contract in accordance with N.C.G.S. Chapter 44A, Article 3.
- B. The corporate surety furnishing the bonds shall be authorized to do business in the state of North Carolina, and shall be acceptable to the Commission. All contract payment bonds and contract performance bonds shall be executed on "Performance Bond" and "Payment Bond" forms provided in the Contract Documents (or attached thereto) and be countersigned by a regularly authorized agent of the corporate surety who is resident in North Carolina and who is licensed by the North Carolina Department of Insurance.
- C. In all Performance and Payment Bonds, the provision that no suit, action, or proceeding by reason of any default whatsoever shall be brought on this Bond after a specified number of months shall be fixed at twelve (12) months. The face value of the Bond shall be one-hundred percent (100%) of the Contract price for a period of twelve (12) months following the day when the last of the labor was performed, or equipment was furnished, or final settlement was made with the Contractor, whichever occurs last.
- D. Whenever the Surety or Sureties on the bond so furnished shall be deemed by the Commission to be insufficient or unsatisfactory, the Contractor, within ten (10) days after notice to that effect shall furnish and deliver a new bond to the Commission in the same penalty and on the same conditions with Surety satisfactory to the Commission and this duty shall continue on the part of the Contractor, whenever and so often as the Commission shall require a new bond with a satisfactory Surety or Sureties. If the Contractor shall fail to furnish such bond, within ten (10) days after said notice is mailed to his address, the Commission through its proper agent or agents, may stop all further work under said Contract and complete the unfinished work at the expense of the Contractor.

1.03 Insurance

- A. The insurance required for this contract is as follows:
1. Commercial General Liability ISO #CG 00 01 10 93: The Contractor shall take out and maintain during the life of this contract commercial general liability insurance with limits

of \$1,000,000 per occurrence; \$2,000,000 aggregate other than products/completed operations; \$2,000,000 aggregate for products/completed.

2. Automobile Liability ISO #CA 00 01 12 93: The Contractor shall take out and maintain during the life of this contract automobile liability insurance in an amount not less than \$1,000,000 combined single limit per accident for bodily injury and property damage from owned, non-owned, and hired automobiles.
3. Workers' Compensation and Employers' Liability Insurance: The Contractor shall take out and maintain during the life of this contract workers' compensation insurance as required by the laws of the State of North Carolina and Employers' Liability with limits of \$100,000 each accident, \$500,000 policy limit and \$100,000 each employee for all employees employed on the project. In case any employee(s) engaged in work under this contract is or are not protected under the Workers' Compensation Statute, the Contractor shall provide adequate coverage for the protection of employees not otherwise protected.
4. Property Insurance: If contracted to construct a building, the Contractor shall purchase and maintain "Builder's Risk" insurance. This insurance shall include the interests of the Public Works Commission, the Contractor and Subcontractors and shall be written on a one hundred percent (100%) completed value basis (full value as of the date that all construction is finished and includes the Contractor's total cost plus profit), and to remain in force until the project is completed and accepted by the Public Works Commission.

Regardless of the nature of the work to be performed, coverage must also be provided for the theft or damage of building materials and supplies, which are not permanently attached and stored on site for any period of time. This coverage shall be an "Installation Floater," and where no building construction is involved, the amount of the coverage shall equal the value of the materials stored on site. It is the responsibility of the Contractor to inform the policy provider of any and all change orders, which increase the building's value. Any penalties or losses incurred due to the Contractor's failure to adequately insure the building during construction will be the Contractor's responsibility. Owner's and Contractor's Protective Liability I.S.O.#CG 00 09 10 93: The Contractor shall secure and maintain during the life of the contract, an Owner's and Contractor's Protective Liability insurance policy for the Public Works Commission, with minimum limits of \$1,000,000 per occurrence/\$2,000,000 aggregate.

B. Acceptability of Insurance

All insurance policies shall be written by insurers licensed to do business in North Carolina. It is realized that certain business activities may not be readily insurable by admitted carriers. If insurance is written by non-admitted carriers whose names appear on the current listing of approved and non-admitted carriers prepared by the North Carolina Department of Insurance, such carriers will be favorably considered assuming they meet all other requirements. Non-admitted carriers should be so identified on the Certificate of Insurance form. The Public Works Commission reserves the right to reject any and all certificates or policies issued by insurers with a Best's rating less than A.

C. Indemnity Provision

Contractor assumes entire responsibility and liability for losses, expenses, demands and claims in connection with or arising out of any injury, or alleged injury (including death) to any person, or damage, or alleged damage, to property of the Public Works Commission or others sustained or alleged to have been sustained in connection with or to have arisen out of or resulting from the

negligence of the Contractor, his subcontractors, agents, and employees, in the performance of the work/service set forth in the Standard Specifications and Special Provisions, and any changes, addenda, or modifications including losses, expenses or damages sustained by the Public Works Commission, and agrees to indemnify and hold harmless the Public Works Commission, its officials, employees or volunteers from any and all such losses, expenses, damages, demands and claims and agrees to defend any suit or action brought against them, or any of them, based on any such alleged injury or damage, and to pay all damages, cost and expenses in connection therewith or resulting therefrom. As an integral part of this agreement, Contractor agrees to purchase and maintain during the life of this contract contractual liability insurance in the amount required in the general liability insurance requirements and to furnish proper evidence thereof.

D. Other Provisions

1. Any deductible or self-insured retention must be declared to and approved by the Public Works Commission.

2. The policies are to contain, or be endorsed to contain, the following provisions:

a. Commercial General Liability Coverage

i. The Public Works Commission, its officials, employees and volunteers are to be covered as additional insured as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, leased or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Public Works Commission, its officials, employees or volunteers.

ii. The Contractor's insurance coverage shall be primary insurance as respects the Public Works Commission, its officials, employees and volunteers. Any insurance or self-insurance maintained by the Public Works Commission, its officials, employees or volunteers shall be excess of Contractor's insurance and shall not contribute with it.

iii. Coverage shall state that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

b. All Coverages

i. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to:

Fayetteville Public Works Commission
Attn: Gloria B. Wrench, Purchasing Manager
P.O. Box 1089
Fayetteville, NC 28302-1089

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Public Works Commission, its officials, employees, and volunteers. In the event the Public Works Commission is damaged by the failure of the Contractor to maintain such insurance and to so notify the Public Works Commission, the Contractor shall bear all reasonable costs properly attributable thereto.

c. Subcontractors

Contractor shall include all subcontractors as insurers under its policies OR shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

d. No Waiver of Immunity

Any insurance coverage required by the terms of this contract shall not be deemed a contract of insurance purchased by the Public Works Commission nor a waiver of the Public Works Commission's immunity pursuant to NCGS 160A-485.

1.04 Copies of Documents

- A. Owner shall furnish to Contractor up to five (5) copies of the Contract Documents.
- B. Additional copies will be furnished by the Project Engineer upon request, at the cost of reproduction.

1.05 Commencement of Contract Times; Notice to Proceed

- A. The Contract Times will commence to run on the date specified in the issued Notice to Proceed.

1.06 Starting the Work

- A. Contractor shall start to perform the work on the date when the Contract Times commence to run as indicated on the Notice to Proceed. Failure to start work within fifteen (15) calendar days of the commencement of Contract time will be documented as a substantial violation of the Contract Provisions and the following action will be taken:
 - 1. The Owner will request in writing the Contractor mobilize personnel, equipment, and material within ten (10) calendar days.
 - 2. If the Contractor fails to mobilize as requested within the given timeframe, Owner will consider the Contractor in violation of the agreement and terminate for cause in accordance with the provisions of the Contract.
 - 3. If the Contractor mobilizes, they shall be required to submit a Recovery Plan detailing the intent to regain any lost time to date and finish the Project by the Final Completion date as listed in the specified time frame detailed in the Contract. This Recovery Plan shall include a new progress schedule and any additional subcontractor submissions for approval.

1.07 Before Starting Construction

- A. Contractor's Review of Contract Documents: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Project Engineer any conflict, error, ambiguity, or discrepancy, which Contractor may discover. The Project Engineer shall obtain a written interpretation or clarification from Design Engineer and provide Contractor written clarification. Contractor cannot proceed until a written response is received. However, Contractor shall not be liable to the Owner, Project Engineer, or Design Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.
- B. Interpretations of Contract Documents: On all plans, drawings, etc., the figured dimensions shall govern in case of any discrepancy between the scales and figures. The Contractor shall take no advantage of any error or omission in the Plans or of any discrepancy between the Plans and Specifications, and the Project Engineer shall make any such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the Specifications and of the Plans as construed by him, and any decision by Project Engineer shall be final.
- C. Schedules: Five (5) business days prior to the pre-construction conference, Contractor shall submit to Project Engineer schedules as outlined in Section 01310 within these Contract Documents.
- D. Shop Drawings and Samples: Requirements regarding Shop Drawings and Samples as well as submittal procedures are covered under Section 01300 within these Contract Documents.

1.08 Pre-construction Conference

- A. Prior to commencement of Work at the site, a pre-construction conference attended by Owner, Contractor, Design Engineer, Project Engineer, and others shall be held. The Owner will contact the Contractor to establish a mutually agreeable date and time to conduct the conference. The purpose of the conference is to discuss general project items, including, but not limited to:
 - 1. Contractor's responsible person and contact information
 - 2. Emergency contact information
 - 3. Submittal schedule
 - 4. Contract issues
 - 5. Safety
 - 6. Project schedule
 - 7. Progress Meetings
 - 8. Sales Tax Certificate/Pay Applications
 - 9. Warranty requirements
 - 10. Site restoration and clean-up

1.09 Quality of Materials

- A. The source of supply of each of the materials shall be approved by the Project Engineer before delivery is started. Representative preliminary samples of the character and quality herein described shall be submitted by the Contractor when indicated or directed, for examination or test; and written approval of the quality of such materials from the respective sources of supply. Only materials conforming to the requirements of these Contract Documents shall be used in the

Work. All materials proposed to be used may be inspected at any time during progress of the preparation and use. All materials shall be approved before being incorporated in the Work.

PART 2. CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

2.01 Intent

- A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. The approved Drawings and Technical Specifications will show the location, details, and dimensions of the Work, which shall be performed in strict accordance therewith. Any deviation from the Contract Documents will be determined by the Project Engineer and authorized in writing.
- C. Any labor, documentation, services, materials, or equipment that is required to produce the intended result shall be provided, whether or not specifically called for, at no additional cost to Owner.
- D. Should any construction or conditions which are not covered by these Contract Documents be required for any proposed Work, "Special Conditions" for such Work will be provided to the Contractor and shall be considered a part of these Contract Documents the same as though printed fully herein. Should any such special provisions or requirements conflict with these Contract Documents, the "Special Conditions" shall take precedence.

2.02 Reference Standards

- A. Standards, Specifications, Codes, Laws, and Regulations
 - 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provisions of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of Owner, Contractor, Project Engineer or Design Engineer, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to Owner, Project Engineer or Design Engineer, or any other of Project Engineer or Design Engineer's consultants, agents, or employees any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

2.03 Reporting and Resolving Discrepancies

- A. Reporting Discrepancies
 - 1. If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall

report it to Project Engineer in writing at once. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Part 4) until an amendment or supplement to the Contract Documents has been issued; provided, however, that Contractor shall not be liable to Owner for failure to report any such conflict, error, ambiguity, or discrepancy unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the Special Provisions of these Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. The provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. The provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).
2. Order of Precedence: If conflicts occur between the Technical Specifications, Details, and Drawings, the Technical Specification shall supersede.

2.04 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:
 1. Addendum, or
 2. Change Order.
- B. The requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
 1. Project Engineer's approval of a Shop Drawing or Sample; or
 2. Project Engineer's written interpretation or clarification.
- C. If Contractor believes that any variation or deviation authorized under this Paragraph entitles Contractor to an adjustment in Contract Price or Contract Time, it is Contractor's obligation to provide written notice to Project Engineer in accordance with Parts 9 and 10 prior to proceeding with the work covered by the variation or deviation.

2.05 Reuse of Documents

- A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect Contract with Owner:
 1. shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Design Engineer, Design Engineer's Consultant, or Project Engineer, including electronic media editions; and

2. shall not reuse any Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and specific written verification or adaptation by Design Engineer. This prohibition shall survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

PART 3. AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

3.01 Availability of Lands

- A. These Contract Documents contains a list of easement special conditions that the Contractor shall comply with. Owner shall be responsible for obtaining all required easements and encroachments necessary to complete the Work, except as provided herein. If there is any delay in Owner's furnishing the Site, Contractor may make a Claim as provided in Part 8.
- B. Upon written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Any and all agreements between the Contractor and individual property Owners shall not obligate the City of Fayetteville, Public Works Commission, or the Design Engineer. Prior to performing any work on private property, acting on behalf of the Owner, the Contractor shall furnish to the Project Engineer a signed and notarized statement executed by the Property Owner acknowledging the Owner, and Design Engineer are not liable for any agreements between the Property Owner and the Contractor. The document shall hold harmless and defend the Owner and Design Engineer from all claims, damages, etc. The Agreement shall be in a format and content approved by the Project Engineer. All actions by Sub-Contractors shall be the Contractor's responsibility to secure a Property Owner's Agreement as described herein. At the completion of the project, the Contractor shall obtain a signed release from the Property Owner for satisfactory completion and restoration prior to issuance of final payment.
- D. The Contractor and all his subcontractors shall exercise extreme care to avoid damage to residents' private property. Should any such damage to residents' private property occur, it is the Contractor(s)' responsibility to notify the Project Engineer, in writing and on the actual date that the damage occurs, as to the extent of the damage and the Contractor(s) written plan to correct same. Contractor(s) written plan to correct damage shall include a timely settlement date. If Contractor(s) fails to timely correct damage to residents' private property, the Owner reserves the right to withhold progress payments until damage is corrected and/or to correct damage and back-charge Contractor(s) for costs incurred.

3.02 Subsurface and Physical Conditions

- A. These Contract Documents include:
 1. Reports of explorations and tests of subsurface conditions at or contiguous to the Site that the Design Engineer has used in preparing the Contract Documents.

2. Drawings of physical conditions relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Design Engineer has used in preparing the Contract Documents.
- B. Contractor may rely upon the general accuracy of these reports and drawings containing subsurface conditions. However, these documents do not take precedence over the Contract Documents. Contractor may not rely upon or make any Claim against Owner, Design Engineer, or any of Design Engineer's Consultants with respect to:
1. The completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 2. Other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. Any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

3.03 Differing Subsurface or Physical Conditions

- A. If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is discovered either:
1. Is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in these Contract Documents is materially inaccurate; or
 2. Is of such a nature as to require a change in the Contract Documents; or
 3. Differs materially from that shown or indicated in the Contract Documents; or
 4. Is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; then Contractor shall, immediately after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Part 4), notify Project Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith until receipt of written order to do so.
- B. Upon receipt of Contractor's written notice, Project Engineer will review the pertinent condition, determine the necessity of obtaining additional information and advise Contractor in writing.
- C. Possible Price and Time Adjustments
1. The Contract Price and/or Contract Time may be adjusted if the Project Engineer determines that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, to the following:

- a. Such condition must meet any one or more of the categories described in this Part 3; and
 - b. Any adjustment in Contract Price and/or Contract Time shall be subject to the provisions of these Contract Documents.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Time as a result of differing subsurface or physical conditions if:
- a. Contractor knew of the existence of such conditions at the time of submission of a Bid or becoming bound under a negotiated Contract; or
 - b. The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to submission of a bid; or
 - c. Contractor failed to give the written notice within the time and as required by these Contract Documents.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Time, as a result of differing subsurface or physical conditions or both, a Claim may be made therefore as provided in Part 8. No claim of Contractor under this paragraph shall be allowed unless:
- a. Contractor has given the written notice required in this Part 3; and
 - b. Contractor submits to Project Engineer a detailed claim setting forth Contractor's right to recover any additional costs and lost time, including the information required by Part 10.

However, Owner, Project Engineer, Design Engineer, Design Engineer's Consultants, and Owner's Consultants, shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

3.04 Underground Facilities

A. EXISTING UTILITIES

The Contractor shall locate existing underground utilities in the areas of work. If utilities are to remain in place, the Contractor shall provide protection during construction operations. Additionally, the Contractor will coordinate with utility companies when working in close proximity to their line/services.

Should uncharted or incorrectly charted piping or other utilities be encountered during excavations, the Contractor shall immediately consult the Project Engineer for directions as how to proceed. The Contractor shall fully cooperate with Owner and utility companies in keeping respective services and facilities in operation.

The Owner has, to the best of its ability, made involved utility owners aware of this project. As appropriate, each utility Owner will be invited to attend the preconstruction conference to discuss potential conflicts and schedules for relocation where required. All adjustments or relocations will be made at the utility owner's expense unless otherwise indicated in these Contract Documents.

Reasonable care has been used to locate and depict existing underground installation on the construction drawings, but the accuracy cannot be guaranteed and some items may not be shown which exist.

The Contractor shall adhere to the provisions of the 2014 Underground Utility Safety & Damage Prevention Act, North Carolina General Statutes, Chapter 87, Article 8A. The Contractor shall contact the NC One Call System for locates a minimum of 3 days prior to beginning work in a particular area. For calls originating within North Carolina, the number is 811 or 1-800-632-4949. For calls originating outside of North Carolina, the number is (919) 855-5760. To check the status of a locate ticket the number is 1-877-632-5050. The Contractor shall include the cost of any coordination and cooperation for utilities in his bid.

Actual horizontal and vertical locations have not been verified. As part of the Contract work, the Contractor is required to dig up each utility which may conflict with construction in advance to verify locations. The utilities shall be "dug up" a minimum of fourteen (14) working days in advance of actual installation of new utilities to allow the Project Engineer an opportunity to adjust grades, alignments, etc., to avoid a conflict. Separate payment will not be made to physically verify the utility locations.

If the Contractor fails to schedule locates or perform advance physical locations in advance of the construction and a conflict arises, the Contractor will be required to make corrective measures as instructed by the Project Engineer at the Contractor's expense. The Contractor's failure to advance plan (minimum fourteen (14) working days) by physically uncovering existing utilities in advance of construction shall not be cause for claim of lost time or for additional compensation. No additional payment will be made for re-mobilization required by the utility locator.

When the Contractor's controlling operations are halted due to the failure of a utility Owner to relocate or adjust a utility after being properly notified by the Contractor, the contract period may be extended by the amount of time the Contractor's controlling operations have been delayed while awaiting the relocation or adjustment. Contractor shall proceed with work in areas not affected by the relocation or adjustment delay.

The Owner, Project Engineer, Design Engineer, and/or Consultants shall not be liable to the Contractor for any claims, costs, losses, or damages incurred or sustained on or in connection with locating existing underground installations.

- B. The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Design Engineer by the Owners of such Underground Facilities, unless it is otherwise provided.
- C. Owner, Project Engineer, Owner's Consultant and Design Engineer shall not be responsible for the accuracy or completeness of any such information or data.

- D. The cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
1. Reviewing and checking all such information and data,
 2. Locating all Underground Facilities shown or indicated in the Contract Documents,
 3. Coordination of the Work with the Owners of such Underground Facilities, including Owner, during construction, and
 4. The safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.
- E. Contractor shall be responsible for the discovery of existing underground installations, in advance of excavating or trenching as required in these Contract Documents.
- F. If an Underground Facility is discovered at or contiguous to the Site which was not shown or indicated, in the Contract Documents, Contractor shall, immediately after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Part 4), identify the Owner of such Underground Facility and give written notice to Project Engineer. Upon receipt of written notice Project Engineer will review the pertinent condition, determine the necessity of obtaining additional information, and notify Contractor in writing. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility. If Project Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued.

The Contract Price and/or the Contract Time, may be adjusted if Project Engineer determines the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, to the following:

1. Facility was not shown or indicated in the Contract Documents, and
 2. The Contractor did not know of or could not anticipate the facility.
- G. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, as a result of differing subsurface or physical conditions or both, a Claim may be made therefore as provided in Part 3. No claim of Contractor under this paragraph shall be allowed unless;
1. Contractor has given the written notice required in Part 3, and;
 2. Contractor submits to Project Engineer a detailed claim setting forth Contractor's right to recover any additional costs and lost time, including the information required by Part 10 of these General Conditions.

However, Owner, Project Engineer, Design Engineer, Owner's CONSULTANTS, and Design Engineer's Consultants, shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project."

H. Underground Facilities Section:

“The cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

- a. Reviewing and checking all such information and data,
- b. Locating all Underground Facilities shown or indicated in the Contract Documents,
- c. Coordination of the Work with the Owners of such Underground Facilities, including Owner, during construction, and
- d. The safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.”

3.05 Reference Points

- A. Construction staking will be performed by the Design Engineer who will also prepare and furnish construction cut sheets to the Owner and Contractor. The Contractor shall not install any utilities without a cut sheet. All requests for staking will be made not less than 96 hours in advance. All construction staking, layout, bore set up, calibrating three dimensional tracking system, etc. shall be accomplished by Contractor.
- B. The Contractor shall be responsible for the preservation of all stakes and marks established by the Design Engineer. Contractor shall report to Project Engineer whenever any reference point or property monument is lost or destroyed or, requires relocation or reinstallation. If any of the stakes, marks, or property corners are carelessly or willfully disturbed, the cost of replacing them shall be charged against the Contractor by the Design Engineer.
- C. Utilities shall be installed at the locations and elevations indicated on the Contract drawings unless otherwise approved by the Owner. The Contractor shall verify invert elevations by instrument at each manhole.

3.06 Hazardous Environmental Condition at Site

- A. Contractor shall not resume Work in any affected area until Owner has provided written notice:
 1. Specifying that any affected area is safe for the resumption of Work; or
 2. Specifying that any special conditions under which such Work may be resumed safely.

If after receipt of written notice, Contractor does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume work under the special conditions, then Owner may order the portion of the Work that is in the area affected by the condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in the in Contract Price and/or Contract Time, or both, as a result of such Work stoppage, or such special conditions under which Work is agreed to be resumed by Contractor, then either party may make a Claim, or deleting that portion of the Work, therefore as provided in Part 8.

- B. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or discovered at the site which was not shown or indicated in Contract Documents. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- C. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately:
1. secure such condition;
 2. stop all Work in connection with such condition and in any area affected (except in an emergency as required by Part 4); and
 3. Notify Project Engineer (and confirm such notice in writing within 24 hours of initial notification).
- D. Contractor shall not resume Work in any affected area until Owner has provided written notice:
1. Specifying that any affected area is safe for the resumption of Work; or
 2. Specifying that any special conditions under which such Work may be resumed safely.

If after receipt of written notice, Contractor does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume work under the special conditions, then Owner may order the portion of the Work that is in the area affected by the condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in the in Contract Price and/or Contract Time, or both, as a result of such Work stoppage, or such special conditions under which Work is agreed to be resumed by Contractor, then either party may make a Claim, or deleting that portion of the Work, therefore as provided in Part 8.

- E. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefore as provided in Part 8. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Part 5.
- F. To the fullest extent permitted by Laws and Regulations, Owner shall, indemnify and hold harmless Contractor, Subcontractors, Design Engineer, Owner's DESIGN Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition:
1. Was not or identified in the Contract Documents to be included within the scope of the Work, and
 2. Was not created by Contractor or by anyone for whom Contractor is responsible.

Nothing in this paragraph shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- G. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Design Engineer, Design Engineer's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this paragraph shall obligate Contractor to indemnify any individual or Contractor entity from and against the consequences of that individual's or entity's own negligence.

PART 4. CONTRACTOR'S RESPONSIBILITIES

4.01 Supervision and Superintendence

A. Superintendent:

1. The Contractor shall designate a full time competent superintendent, satisfactory to the Project Engineer, to supervise the Work and to respond to the Project Engineer concerning the Owner's interest in the construction.
2. The Superintendent shall have full authority to act on behalf of the Contractor and all communications, instructions, directions, and notices given to the Superintendent by the Project Engineer shall be binding to the Contractor.
3. The Superintendent shall give the Work his constant attention to facilitate the progress thereof and shall cooperate with the Project Engineer in every way possible. The Superintendent shall at all times have a competent and reliable English-speaking representative on site, authorized to receive orders and act for him.
4. If construction activity stops due to the Superintendent not being available or competent, the Contractor shall not have recourse against the Owner.
5. Contractor's Superintendent shall be responsible for coordination of the Work with other contractors or subcontractors onsite.

B. Any Employee of or person associated with the Contractor shall not:

1. Use any profane or abusive language to any person, or;
2. Interfere with the performance of the Work, or;
3. Disobey instructions, or;
4. Be careless, reckless or incompetent, or;
5. Be objectionable to the Owner.

Any employee of or person associated with the Contractor that fails to abide by the above conditions shall be removed from the project site on the request of the Project Engineer, and shall not be allowed on the project site except with the Project Engineer's written consent.

C. Subcontractors

1. The Contractor shall submit the names and references of both the Superintendent and all Subcontractors to the Project Engineer for approval prior to construction starting on the project. The Contractor shall not begin work until receiving written approval. If during the duration of the contract the Contractor changes Superintendent and Subcontractors, Contractor shall submit names and references to Project Engineer for approval prior to new personnel starting work.
2. If the Contractor has a Subcontractor working under this Contract, the Contractor shall have a Superintendent on the site at all times. Construction activity shall be stopped if the Contractor's Superintendent is not on site.
3. The Contractor is and remains fully responsible for his own acts or omission as well as those of any subcontractors or any employee of either. The Contractor agrees that no contractual relationship exists between the Subcontractor and the Owner in regard to the Contract, and that the subcontractor acts on his work as an agent or employee of the Contractor. The Contractor agrees to bind specifically every subcontractor to the applicable terms and conditions of these Contract Documents.

4.02 Labor; Working Hours

- A. This agreement is subject to the applicable provisions of the Contract Works Hours and Safety Standards Act. No Contractor or Subcontractor contracting for any part of the Work shall require or permit any laborer or mechanic to be employed on the Work in excess of forty hours in any work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times that person's basic rate of pay for all hours worked in excess of forty hours in such work week.
- B. Contractor shall employ only competent persons to do the Work and whenever Owner shall notify Contractor, in writing, that any person on the Work appears incompetent, disorderly, or otherwise unsatisfactory, such person shall be removed from the Project and shall not again be employed on it except with written consent of Owner.
- C. Contractor and Subcontractors shall agree not to discriminate in the employment of labor because of race, creed, sex, religion or country of origin. Contractor and Subcontractors shall, give preference in hiring of workers for the Project to qualified local residents.

4.03 Prosecution of Work

- A. The Contractor shall undertake the Work with all necessary materials, equipment and labor to ensure its completion within the time set forth in the Contract. Should the Contractor choose to discontinue the Work he shall notify the Owner in writing a minimum of three (3) business days in advance. The Owner shall review and respond to the request in writing. If approved, the Contractor shall notify the Owner in writing a minimum of 24 hours prior to the resuming operations.

4.04 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Contract Documents shall expressly run to the benefit of Owner. If required by Owner, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.
- C. Workmanship shall be in accordance with these Contract Documents and shall be subject to the Owner's approval.

4.05 Substitutes and "Or-Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or-equal" item or no substitution is permitted, or the equipment is Base Bid equipment, other items of material or equipment of other Suppliers may be submitted (in accordance with Section 01300) to Project Engineer for review.
 - 1. Or Equal Items – For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. In the exercise of reasonable judgment the Project Engineer determines that:
 - i. it is equivalent to or better than the product named in form, function, performance, reliability, quality, features, materials of construction, operation and maintenance costs, static and dynamic loads, general dimensional configuration, size, weight, and appearance;
 - ii. it will reliably perform at least equally well in function imposed by the design concept of the completed Project as a functioning whole, and;
 - b. Contractor certifies that:
 - i. there is no increase in cost to the Owner; and
 - ii. it will conform substantially to the detailed requirements of the item named in the Contract Documents.

Project Engineer may reject the proposed substitution at their sole discretion. No justification shall be necessary for the rejection.

4.06 Concerning Subcontractors, Suppliers, and Others

- A. Contractor shall not employ any subcontractor, supplier, or other individual or entity (including those acceptable to Owner as indicated in this Part 4), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Contract Documents require the identity of certain subcontractors, suppliers, or other individuals or entities to be submitted to Owner by Owner by a specified date prior to the Effective Date of the Contract, and if Contractor has submitted a list thereof in accordance with the Contract Documents, Owner's acceptance of any Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity at no additional cost to the Owner. No acceptance by Owner of any Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner to reject defective Work.
- C. Contractor shall be fully responsible to Owner for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work. Nothing in the Contract Documents shall create any contractual relationship between Owner, and any Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of Owner to pay or to see to the payment of any moneys due any Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect Contract with Contractor.
- E. All Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work shall communicate with Owner through Contractor.
- F. The Contract Documents shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed by a Subcontractor or Supplier shall be pursuant to an agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents. Whenever any agreement is with a Subcontractor or Supplier who is listed as an additional insured on the insurance provided in the Instructions to Bidders, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Design Engineer, and all other individuals or entities identified in the Contract Documents to be listed as insured or additional insurers (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other insurance applicable to the Work. If the insurers on any policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.
- H. The CONTRACTOR shall not subcontract more than 49% of the value of this Contract. Violation of this provision may be deemed to be a breach of the Contract. CONTRACTOR's

failure to remedy after notice shall entitle OWNER to any and all remedies as set forth in the Contract Documents applicable to OWNER'S rights in the event of breach.

4.07 Patent Fees and Royalties

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in these Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Design Engineer, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

4.08 Permits

- A. Unless otherwise provided in these Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all charges and inspection fees necessary to complete the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Contract. Owner shall pay all charges of utility Owners for connections to provide permanent service to the Work.

4.09 Laws and Regulations

- A. Contractor shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, Owner and Design Engineer shall not be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. It shall not be Contractor's primary responsibility to make certain that the Contract Documents are in accordance with Laws and Regulations, but this shall not relieve Contractor of their obligations set forth under Part 2.
- C. Changes in Laws or Regulations not known at the time of opening of Bids having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Time. If Owner and Contractor are unable to agree on any adjustment a Claim may be made as provided in Part 8.

4.10 Taxes

- A. Contractor shall pay all sales, consumer, use, and other taxes required to be paid in accordance with the Laws and Regulations which are applicable during the performance of the Work.

4.11 Use of Site and Other Areas

- A. **Limitation on Use of Site and Other Areas:** Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the Owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
- B. **Removal of Debris During Performance of the Work:** During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations as well as the terms in the Special Provisions.
- C. **Cleaning:** Prior to Final Completion of the Work Contractor shall clean the Site and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. **Sanitary Provision:** The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the Department of Health, or of the other bodies or tribunals, having jurisdiction thereof. He shall commit no public nuisance. The Contractor shall at all times keep the site of the work free from accumulations of waste material or rubbish caused by his employees or work. Upon the completion of the work and before final acceptance can be made, all evidence of construction shall be removed, all property restored to its original condition, all manholes, and any other items of construction, shall be clean and neat in appearance; any other necessary items of clean-up shall be performed.
- E. **Loading Structures:** Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.
- F. The Contractor shall carefully protect from disturbance or damage all private property and property corners. Property corners shall not be removed until the Project Coordinator has witnessed or otherwise referenced their location. Any damage to property corners shall be repaired/replaced at no additional cost to the Owner. If any markers, identified or not, are disturbed, removed, or destroyed through the construction process, the Contractor shall retain the services of a Professional Land Surveyor, licensed in the State of North Carolina, and have those markers replaced. The Contractor shall further submit a drawing identifying the locations of those markers, signed and sealed by the licensed Professional Land Surveyor. At the Contractor's discretion, and without additional cost to the Contract, the surveyor may contact the Design Engineer and have the markers offset prior to the commencement of construction.
- G. The Contractor shall not enter upon private property for any purpose without obtaining permission. He shall use suitable precautions to prevent damage to pipes, conduits, and other

underground structures, and shall protect carefully from disturbance or damage all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed. When or where direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct, in the execution of work, or in consequence of the non-execution thereof on the part of the Contractor, he shall restore at his own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding or otherwise restoring, as may be directed, or he shall make good such damage or injury in an acceptable manner.

- H. When any direct or indirect damage or injury is done to public or private property, by or on account of any act, omission, neglect or misconduct in the execution of the Work, or in consequence of the non-execution thereof on the part of the Contractor, he shall restore, at his own expenses, such property to a condition equal or better than existing before such damage or injury was done or he shall make good damage or injury in an acceptable manner.

4.12 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
1. All persons on the Site or who may be affected by the Work;
 2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. Other property at the Site or adjacent thereto not designated for removal, relocation, or replacement in the course of the Work.
- B. Contractor shall comply with all applicable State and Federal Laws and Regulations relating to the safety and protection of persons or property, from damage, injury, or loss. The Contractor shall erect and maintain all necessary safeguards for safety and protection. In the event a conflict arises between agencies, the stricter regulation shall apply. Contractor shall notify Owners of adjacent property and other utility Owners when the Work may affect them. The Contractor shall cooperate in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in this paragraph caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of the Contract Documents or to the acts or omissions of Owner or Design Engineer or Design Engineer's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Owner has issued a notice to Contractor in accordance with Part 12 that the Work is acceptable.
- C. The Contractor shall comply with the Owner's Safety Manual, Latest Edition. Where conflicts arise between Owner and other regulations, the more stringent shall apply. A copy of the Owner's Safety Manual will be made available to the Contractor. Any interpretation and enforcement

made by the Owner shall be binding upon the Contractor. The Owner may visit the Contractor's work areas to verify that safety procedures are in accordance with applicable regulations. If the Contractor's personnel are observed creating a hazardous environment, corrective action shall be initiated immediately to reduce the possibility of injury. Corrective action by the Owner will consist of advising the Contractor, of compliance and could result in the Owner issuing notices of non-compliance for repeat violations for failure to take corrective measures. Inspection by the Owner shall not constitute an acceptance of the Contractor's practices, methods, techniques, procedures, nor release the Contractor of the responsibility for safety and health of the job site.

- D. Neither the professional responsibilities of the Owner, Project Engineer or Design Engineer, nor the presence of the Owner or Design Engineer's employees and/or consultants at the construction site, shall relieve the Contractor or any other entity of their obligations, duties and responsibilities including but not limited to, construction means, methods, sequences, techniques or procedures necessary for performing, superintending or coordinating all portions of the Work in accordance with the Contract Documents and any health or safety precautions required by any regulatory agencies. The Owner or Design Engineer's their employees, representatives, and sub-consultants shall have no responsibility for site safety.
- E. The Owner's or Design Engineer's personnel have no authority to exercise any control over any construction contractor or other entity or their employees in connection with any health and/or safety precautions. The Contractor is solely and exclusively responsible for job site safety and shall include the Owner and Design Engineer's as additional insured for primary protection under the Contractor's general liability policy.
- F. The Contractor shall indemnify, defend, and hold harmless the Owner, Project Engineer, and Design Engineers and their consultants from any claim or liability for injury or loss arising from the Owner's, Project Engineer or Design Engineer's alleged failure to exercise site safety responsibility or from any claim or liability for injury or loss that allegedly arises from the Contractor's performance of the Work. The Contractor shall require all sub-contractors to conform to these provisions.

4.13 Safety Representative

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.
- B. All crews that operate in and around trenches shall have their own Competent Person as defined by OSHA standards.

4.14 Hazard Communication Programs

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information in accordance with Laws or Regulations. The Contractor shall be responsible to provide and maintain Material Safety Data Sheets (MSDS) sheets at the job site at all times. The sheets shall be located in an easily accessible and prominently located area.
- B. The Contractor shall notify Owners of adjacent property and other utility Owners when the Work may affect them. The Contractor shall erect and maintain all necessary safeguards for safety and protection. All damage, injury, or loss to any property referred to in this paragraph caused by Contractor, any Subcontractor, Supplier, or any other individual or entity employed by any of

them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of the Contract Documents or to the acts or omissions of Owner, Design Engineer or Design Engineer's Consultant).

- C. The Contractor shall comply with the Owner's Safety Manual, Latest Edition and all applicable State and Federal Laws and Regulations relating to the safety and protection of persons or property, from damage, injury, or loss. Where conflicts arise between Owner and other regulations, the more stringent shall apply. A copy of the Owner's Safety Manual will be made available to the Contractor. Any interpretation and enforcement made by the Owner shall be binding upon the Contractor. The Owner may visit the Contractor's work areas to verify that safety procedures are in accordance with applicable regulations. If the Contractor's personnel are observed creating a hazardous environment, corrective action shall be initiated immediately to reduce the possibility of injury. Corrective action by the Owner will consist of advising the Contractor of compliance and could result in the Owner issuing notices of non-compliance for repeat violations or failure to take corrective measures. Inspection by the Owner shall not constitute an acceptance of the Contractor's practices, methods, techniques, procedures, nor release the Contractor of the responsibility for safety of the job site."

4.15 Emergencies

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give the Project Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused or are required as a result of the emergency. If the Project Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

4.16 Continuing the Work

- A. Contractor shall continue the Work and adhere to the progress schedule during all disputes or disagreements with Owner. The Contractor's refusal to continue the Work during disputes and disagreements with Owner, the pending of claims, or the pending of change order requests shall be a violation of the Contract Documents.
- B. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Part 13 or as Owner and Contractor may otherwise agree in writing.

4.17 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner, Project Engineer, and Design Engineer that all Work shall be in accordance with the Contract Documents and shall not be defective. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. Abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - a. Normal wear and tear under normal usage.

B. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following shall constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. Observations by Project Engineer;
2. Recommendation by Project Engineer or payment by Owner of any progress or final payment;
3. The issuance of a certificate of Final Completion by Project Engineer or any payment related thereto by Owner;
4. Use or occupancy of the Work or any part thereof by Owner;
5. Any acceptance by Owner or any failure to do so;
6. Any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Project Engineer;
7. Any inspection, test, or approval by others; or
8. Any correction of defective Work by Owner.

4.18 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Design Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Design Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, 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 Contractor or any Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor shall not extend to the liability of Design Engineer and Design Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
1. The preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Contract Documents; or
 2. Giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

4.19 Access to Records

- A. Contractor and all Subcontractors shall maintain books, records, documents, and other evidence directly pertinent to performance of the Work under the Contract Documents in accordance with generally accepted and consistently applied accounting principles and practices. Owner shall have access during normal business hours to books, records, documents, and evidence for the purposes of inspection, audit, and copying. Contractor shall provide suitable facilities for access and inspection. All books, records, and evidence shall be maintained and made available for a period of three (3) years after the date of final payment or until the final settlement of any disputes, claims, and litigation, whichever shall occur later. Contractor shall provide to Owner, when requested, copies of all purchase orders issued or sub-agreements executed, complete with all amendments, for Work under the Contract Documents. Contractor shall include this provision in all subcontracts.

4.20 Chemical Uses

All chemicals used during project construction or furnished for project operation, whether herbicides, pesticides, disinfectant, polymer, reactant, fertilizer or of other classification, must show acceptance by either the Environmental Protection Agency or the USDA. Use of all such chemicals and disposal of residues shall be used in strict accordance with label or manufacturer's instructions. Herbicide, pesticide and fertilizer usage shall be consistent with the Federal Insecticide, Fungicide and Rodenticide Act and shall be in accordance with label restrictions.

If the Contractor encounters any materials considered or suspected of being hazardous, he shall immediately secure the area and contact the Owner for further instructions.

4.21 Containment

The Contractor shall comply with the following requirements:

- a. Equipment utilized during the construction activity on a site must be operated and maintained in a manner as to prevent the potential or actual pollution of the surface or ground waters. Fuels, lubricants, coolants, and hydraulic fluids, or any other petroleum products, shall not be discharged on the ground or into surface waters. Spent fluids shall be disposed of in a manner so as not to enter the waters, surface or ground, and in accordance with applicable and federal disposal regulations. Any spilled fluids shall be cleaned up to the extent practicable and disposed of in a manner so as not to allow their entry into the waters, surface or ground, storm sewers, or drains on private or public (State) property. The Contractor is required to provide primary and secondary containment system for fluid storage, fueling and servicing equipment.
- b. The Contractor, his Subcontractors and Material Suppliers are prohibited from discharging any waste products from concrete trucks to include "wash down" water or from concrete coring and sawing work or any other unsuitable construction materials or products into the storm sewer system or discharge onto the Owner's property.
- c. The Contractor shall control the management and disposal of litter and sanitary waste from the site such that no adverse impacts to water quality occur.
- d. The Contractor shall pay all costs of the cleanup and removal of any such unauthorized discharge and pay any and all fines, penalties and/or damages.

4.22 Soil and Erosion Control Plan and NPDES Permit

Any land-disturbing activity performed by the Contractor(s) in connection with the project shall comply with all erosion control measures set forth in the Contract Documents and any additional measures which may be required in order to ensure that the project is in full compliance with the Sedimentation Pollution Control Act of 1973, as implemented by Title 15, North Carolina Administrative Code, Chapter 4, Sedimentation Control, Subchapters 4A, 4B and 4C, as amended (15 N.C.A.C. 4A, 4B and 4C).

Minimum requirements for erosion control are shown on the Drawings, based on the Designer's anticipated construction methods and sequences. Individual Contractors shall supplement, adjust or provide additional measures to compliment his type of construction and/or phasing and sequencing to prevent transmittal of silt. Individual Contractors are required to maintain minimum standards for erosion control as approved or required by the North Carolina Department of Environment and Natural Resources. All fees, penalties, fines for non-compliance and all civil actions resulting there from shall be the Contractor's responsibility and in no way involves the Owner or Designer. The Contractor may be required to modify or supplement measures at no additional cost to the Owner. All erosion control measures shall remain serviceable until the site is restored and stabilized, upon such time the measures shall be removed by the Contractor. The site must be restored, stabilized and any offsite sedimentation must have been removed and areas affected restored prior to the Designer's acceptance for Final Request for Payment.

The Contractor shall be required to prepare and obtain an approved Erosion Control Plan amending the original permitted Plan submitted by the Owner. The Supplemental Erosion Control Plan shall address staging/storage areas, haul roads, borrow pit operations and/or disposal/waste areas regardless of the size disturbance. The Contractor shall pay all fees associated with the supplemental Plan and a copy of the NCDENR approved Plan shall be furnished to the Designer. Work cannot begin until the Plan is approved by NCDENR. Permanent and temporary erosion control measures proposed by the Contractor for staging areas, borrow and disposal areas, haul roads, etc. shall be at the Contractor's expense and shall not constitute additional compensation.

- a. Upon receipt of notice that a land-disturbing activity is in violation of said act, the Contractor(s) shall be responsible for ensuring that all steps or actions necessary to bring the project in compliance with said act are promptly taken.
- b. The Contractor(s) shall be responsible for defending any legal actions instituted pursuant to N.C.G.S. 113A-64 against any party or persons described in this article.
- c. The Contractor shall be required to display at the job-site office (or readily available on the project site), both the Owner's Erosion Control Permit and the Contractor's Supplement Erosion Control Permit. A copy of the amended Permit or evidence of an acceptable shall be furnished to the Designer prior to beginning work.

NPDES Stormwater Discharge Permit for Construction Activities: Regulations adopted by the US Environmental Protection Agency (US EPA) and by the North Carolina Division of Water Quality require that a National Pollutant Discharge Elimination System (NPDES) permit be obtained for stormwater discharges from construction activities with land disturbance of 1 or more acres. This permit is in addition to the approved Erosion and Sediment Control Plan acceptance. The Division of Water Quality is delegated by the US EPA to administer the NPDES permit program in North Carolina. This project is subject to these NPDES general permitting requirements. The Contractor shall comply with the application terms and conditions of this General Permit and is subject to enforcement by the Division of Water Quality for any violations of the General Permit.

The General Permit is tied to an approved Erosion and Sediment Control Plan issued by the North Carolina Division of Land Resources. Adherence to the Erosion and Sedimentation Control Plan is an enforceable component to the General Permit. The General Permit not only requires adherence to the approved Erosion and Sedimentation Control Plan, but also includes other limitations and controls. Some of the major items are outlined below.

- a. The permit covers projects that disturb one or more acre of land.
- b. The Contractor shall inspect all erosion and sedimentation control facilities and also shall observe runoff at stormwater discharges in accordance with the general permit (See Part I below for specific frequencies, etc.) Discharges to certain impaired waters require more frequent inspections.
- c. Records of inspections shall be maintained with a copy of the approved Erosion and Sedimentation Control Plan at the project site,
- d. The General Permit has other provisions that address areas that could affect stormwater runoff from construction activity that are not a part of an erosion and sedimentation control Plan. These areas include matters such as demolition debris, chemical usage, and oil spills that may contaminate stormwater runoff on a construction site.

1. Minimum Monitoring and Reporting Requirements

- a. All sedimentation and erosion control of facilities shall be inspected and documented by the Contractor at least once every seven calendar days and within 24 hours after any storm event of greater than 0.5 inches of rain per 24 hour period. The Contractor shall install and maintain a rain gauge on the site and a record of the rainfall amounts and dates.
- b. Storm water runoff discharges shall be inspected by visual observation for color, foam, outfall, staining, visible sheens, dry weather flows and muddy water (at the frequency described above) to evaluate the effectiveness of the pollution control facilities or practices. If any visible off-site sedimentation is leaving the site, corrective action shall be taken to reduce the discharge of sediments.
- c. The Contractor shall submit with each Request for Payment, a written report of weekly inspections. A sample report log is included in Appemdix D. Visible sedimentation found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measures taken to clean up the sediment that has left the site. These records shall be made available to DEM or authorized agent upon request.

2. Maintenance and Inspections

- a. The Contractor shall provide the necessary operation and maintenance to keep all erosion controls devices and materials in good repair and operating at optimum efficiency. The Owner reserves the right, within 24 hours prior notice to the Contractor to repair any erosion control measures or materials as required, and deduct the cost of those repairs from the Contractor's Request for Payment.
- b. The Owner, Designer or DEM representatives may periodically evaluate the project for compliance with these requirements.
- c. The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or

required to be maintained under this general permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both.

The Contractor shall insure that the streets connecting to the project are protected from mud, sand, stone, litter or debris in any form. All mud collected on vehicle wheels shall be removed or cleaned off before leaving the construction site. Should any mud or debris from the project collect on the streets the mud or debris shall be removed immediately to prevent any hazards to vehicular or pedestrian traffic as well as from entering the storm drainage system. The Contractor is required to clean the streets daily of construction related debris, dust and mud and is required to clean the storm drainage system (and downstream systems) affected by construction run off completely prior to final acceptance and payment. The Owner reserves the right to proceed with street cleaning should the Contractor fail to comply with this requirement and deduct the costs from the Contractor's Request for Payment.

To the fullest extent permitted by law, the Contractor(s) shall indemnify and hold harmless the Owner, the Designer and the agents, consultants and employees of the Owner and Designer, from and against all claims, damages, civil penalties, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from the performance of work or failure of performance of work, provided that any such claim, damage, civil penalty, loss or expense is attributable to a violation of the Sedimentation Pollution Control Act and/or the NPDES Storm Water Discharge Permit. Such obligation shall not be construed to negate, abridge or otherwise reduced any other right or obligation of indemnity which would otherwise exist as to any party or persons described in this article.

PART 5. OTHER WORK

5.01 Related Work at Site

- A. Owner may perform other work related to the Project at the Site by Owner's employees, other contractors, or have other work performed by utility Owners. If other work is not noted in the Contract Documents, then:
 - 1. Owner shall provide written notice to Contractor prior to starting any other work; and
 - 2. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Time that should be allowed as a result of other work, a Claim may be made as provided in Part 8.

- B. Contractor shall provide proper and safe access to the Site for all contractors, utility Owners, and Owner's employees performing other work. Contractor shall provide a reasonable opportunity for the mobilization and storage of materials and equipment and the performance of such other work. The Contractor shall properly coordinate the other work with theirs. Unless otherwise provided in the Contract Documents, Contractor shall perform all work that may be required to properly integrate with other work. Contractor shall not endanger or alter any work of others without the expressed written consent of Project Engineer. The duties and responsibilities of Contractor under this paragraph are for the benefit of utility Owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in direct Contracts between Owner, and utility Owners, and other Contractors.

- C. If any part of Contractor's Work depends upon work performed by others under this Part 5, Contractor shall notify Project Engineer in writing of any delays, defects, or deficiencies in the

other work that may prevent the Contractor from performing the Work. Contractor's failure to report will constitute an acceptance of the other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in the other work.

5.02 Coordination

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the Project Engineer shall provide the following:
 - 1. The individual or entity who will have authority and responsibility for coordination of the activities among the various Contractors will be identified;
 - 2. The specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. The extent of such authority and responsibilities will be provided.
- B. Unless otherwise specified by the Project Engineer, Owner shall have sole authority and responsibility for such coordination.

PART 6. OWNER'S RESPONSIBILITIES

6.01 Project Engineer

- A. Project Engineer shall be the Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Project Engineer as Owner's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of Owner and Project Engineer. The assignment of any authority, duties, or responsibilities to Project Engineer under the Contract Documents, or any undertaking, exercise, or performance thereof by Project Engineer, is intended to be for the sole and exclusive benefit of Owner and not for the benefit of Contractor, Subcontractor, Supplier, or any other person or organization, or for any surety or employee or agent of any of them.

6.02 Roles and Responsibilities

- A. Authorities and Duties of Project Engineer
 - 1. The Project Engineer shall in no case act as foreman, direct the Contractor's personnel, subcontractor personnel or direct or perform duties for the Contractor, nor interfere with the management of the Work by the Contractor.
 - 2. The Project Engineer may make changes in grades and quantities when necessary to keep Work in progress.
 - 3. To prevent disputes and litigation, the Project Engineer shall in all cases determine the amount, quality, and acceptability of the Work and materials which are to be paid for under the Contract. The Project Engineer shall in all cases decide every question which may arise relative to the fulfillment of the Contract. The Project Engineer's opinion of the costs and decisions shall be final and conclusive.
 - 4. The Project Engineer will not decide disputes between the Contractor and person or entities other than the Owner.

5. Clarifications and interpretations of the Contract Documents shall be issued by Project Engineer.

B. Authorities and Duties of the Project Coordinator

1. The Project Coordinator employed by the Owner shall be authorized to inspect all Work performed and all materials furnished. Their inspection shall extend to all parts of the Work, and to preparation or manufacture of the materials to be used.
2. The Project Coordinator shall report to the Project Engineer as to the progress and performance of the Work. The Project Coordinator shall report whenever the materials furnished and/or the work performed by the Contractor fails to fulfill the requirements of the Contract Documents. The Project Coordinator shall notify the Contractor of any failure to meet requirements. However, such observation shall not relieve the Contractor of any obligation to perform all the Work strictly in accordance with the Contract Documents.
3. In case of any dispute arising between the Contractor and the Project Coordinator as to the materials furnished or the performance of the Work, the Project Coordinator shall have the authority to reject materials or refer the issue to the Project Engineer. Any suspension or work stoppage for rejected materials or performance of the Work shall not be the basis of a claim by the Contractor for additional Contract time or costs. Such rejection shall also not be the basis of a future claim by the Contractor for adjustment in Contract unit price or lump sum price or any work item contained in the Contract.
4. Where special inspection or testing is required by the State laws or local ordinances, instruction of the Project Engineer, specification or codes, the Contractor shall give adequate notice to the Project Coordinator of the time set for such inspection or test, if the inspection or test will be conducted by a party other than the Project Engineer. Such section tests or inspections shall be made in the presence of the Project Engineer or his authorized representative, and it shall be the Contractor's responsibility to serve ample notice of such test.
5. The Project Coordinator shall inspect the Work for the purposes of payment approval and monitoring progress of the Work. However, the Project Coordinator shall not have any responsibility for the Work performed by the Contractor or its subcontractors, for the Safety of the work site, nor for any deficiency in the Work, whether discovered during the construction or after acceptance.
6. Regardless of the of the inspections by the Project Coordinator or the Project Engineer, the Contractor is responsible for performing and completing the Work in accordance with the Contract Documents. The Owner has no liability or responsibility to the Contractor or Surety for work performed by the Contractor which is not in accordance with the Contract Documents, regardless of whether discovered during construction or after acceptance.

6.03 Communications to Contractor

- A. Except as otherwise provided in these Contract Documents, Owner shall issue all communications to Contractor through Project Engineer.

6.04 Clarifications and Interpretations

- A. Requests for clarification from the Contractor shall be directed to the Project Engineer. The Project Engineer, in coordination with the Design Engineer (as the Project Engineer deems necessary) will review the request for clarification and issue written clarifications or interpretations as necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Any written clarifications and interpretations shall be binding on Owner and Contractor. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Time, or both, that should be allowed as a result of a written clarification or interpretation; a Claim may be made as provided in Part 8.

6.05 Replacement of Design Engineer

- A. In case of termination of the employment of Design Engineer, Owner shall appoint an engineer whose status under the Contract Documents shall be that of the former Design Engineer.

6.06 Furnish Data

- A. Owner shall furnish the data required of Owner in accordance with the Contract Documents.

6.07 Decisions on Requirements of Contract Documents and Acceptability of Work

- A. If Project Coordinator and Contractor cannot agree to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work, the matter will be referred to Project Engineer for final decision. Written notice (to include supporting documentation) of each such claim, dispute, or other matter shall be delivered by the Contractor to the Project Engineer no later than thirty (30) days calendar days after the start of the occurrence. Failure to file a claim within the allowed time frame shall waive the Contractor's ability to make future claims for that particular instance. Project Engineer will render a formal decision in writing within thirty (30) calendar days after receipt of the Contractor's submittal, in accordance with Contract Documents.
- B. The rendering of a decision by Project Engineer with respect to any claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Part 12) shall be a condition precedent to any exercise by Owner or Contractor of such rights or remedies as either may otherwise have under the Contract Documents or by Laws and Regulations in respect to any such claim, dispute, or other matter.

6.08 Rejecting Defective Work

- A. Project Engineer shall have authority to reject Work that is not in accordance with the Contract Documents. Project Engineer shall also have authority to require special inspection or testing as provided in Part 11, whether or not the Work is fabricated, installed, or completed.

6.09 Determinations for Unit Price Work

- A. Project Coordinator shall determine the actual quantities and classifications of Work performed. Project Coordinator shall review with Contractor the actual quantities and classifications for payment prior to Contractor submitting an Application for Payment.

6.10 Pay When Due

- A. Owner shall make payments to Contractor in accordance with these Contract Documents.

6.11 Limitations on Owner's Responsibilities

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

6.12 Limitations on Project Engineer and Project Coordinator Responsibilities

- A. Project Engineer and Project Coordinator shall not be responsible for the acts or omissions of Contractor or of any Sub-contractor, any Supplier, or of any other individual or entity performing any of the Work.
- B. Project Engineer and Project Coordinator shall not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Project Engineer and Project Coordinator shall not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. The limitations upon authority and responsibility set forth in this paragraph shall also apply to Owner's Consultants, Agents, Officers, and Employees.

6.13 Non Compliance Notices

- A. Failure to comply with any terms of this Contract shall result in the issuance of a Non-Compliance Notice (NCN). This notice shall be issued by the Project Engineer and will outline the violation of the Contract. In the notice, a timeframe for resolution will be established. If the issue is not resolved and a written response is not received within the given timeframe, pay applications shall, at the Project Engineer's discretion, not be processed.
- B. After two (2) NCN's have been issued for the same violation, the project may be shut down until the issue is resolved to the Owner's satisfaction. If Work is stopped due to a Contract violation, no consideration will be given for an extension of Contract Time. The issuance of any NCN may influence the Owner's decision to award the Contractor future work.

PART 7. DESIGN ENGINEER'S STATUS DURING CONSTRUCTION

7.01 Limitations on Design Engineer's Authority and Responsibilities

- A. Except for the negligence of Design Engineer, its agents, officers, and employees neither Design Engineer's authority or responsibility under the provisions of the Contract Documents nor any decision made by Design Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking or performance of any authority or responsibility, by Design Engineer shall create, impose, or give rise to any duty in Contract, tort, or otherwise owed by

Design Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

7.02 Visits to Site

- A. Design Engineer will make visits to the Site at intervals appropriate to the various stages of construction, as Design Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Design Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Design Engineer efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents.
- B. Design Engineer shall not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incidental thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

PART 8. CHANGES IN THE WORK; CLAIMS

8.01 Authorized Changes in the Work

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time order additions, deletions, or revisions in the Work by a Change Order or a Work Change Directive. Upon receipt of the notification from Project Engineer, Contractor shall proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. At any time Owner may request Contractor to submit a proposal (Change Order Request) for a proposed change in the Work. Within ten (10) business days after receipt of a written Change Order Request, Contractor shall submit, to Owner, a written detailed proposal for the change. The detailed proposal shall include an itemized estimate of all costs that will result directly or indirectly from the proposed change and include an assessment of the impact on the overall project schedule. Unless otherwise directed, itemized estimates shall be in accordance with Part 9. Proposals shall be of sufficient detail to permit an analysis of all material, labor, equipment, subcontracts, overhead costs, and fees and shall cover all work involved in the change. The proposal shall cover all Work involved in the change, whether such Work was deleted, added, changed, or impacted. Each cost category shall be supported with substantiating documentation which may include, but is not limited to, quantity takeoffs, quotations, invoices, cost records and certified payrolls. Itemized schedule adjustments shall be in sufficient detail to permit an analysis of impact. If Owner elects to proceed with the change covered by the Request for Proposal, such change will be authorized by execution of proper Change Order Request documentation in accordance with this Part 8. Notwithstanding the Change Order Request, Contractor shall continue to perform the Work and maintain the progress schedule. Owner shall have twenty (20) business days after receipt of the detailed proposal to respond in writing. Delays in the submittal of the written and detailed proposal will be considered non-prejudicial.
- C. The adjustment in Contract Price and/or Contract Time stated in a Change Order shall comprise the total price and/or time adjustment due or owed Contractor for the Work or changes defined in the Change Order. Signing of the Change Order constitutes full and mutual accord by Owner and Contractor for the adjustment in the Contract Price and/or Time as a result of increases or

decreases in costs and time of performance caused directly and indirectly by the change. By approving the Change Order the Contractor waives all rights to claim further adjustments related to the Change Order.

- D. Contractor is obligated, in the performance of changes in the Work, to mitigate all cost and time related to any changes and shall identify in writing, when requested by Owner, the actions taken in that regard.
- E. In the event that Owner and Contractor are unable to agree as to the cost and time to perform the change (deletions or additions) in the Work, Owner and Project Engineer may make a unilateral determination of the reasonable cost and time to perform the change in the Work, based upon their own estimates, Contractor's submission, or a combination thereof, and issue a unilateral Change Order for the amounts of cost and time so determined, which shall become binding upon Contractor. The unilateral Change Order shall enable Owner to make payments for Work performed thereunder, and Contractor shall be paid for work completed, based on costs determined by Owner. Contractor may appeal the unilateral Change Order within fifteen (15) business days of receipt, as provided in Part 14. Failure of the parties to reach an agreement regarding the cost and time of performing the change in the Work shall not relieve Contractor from performing the change in the Work.
- F. Should unforeseen circumstances arise which, in the opinion of the Project Engineer, require work to be done upon which no price can be agreed, the Project Engineer may require that the work be accomplished under negotiated contract with another Contractor or with the Owner's own forces, or on a force account basis as follows:
1. All Costs shall be in accordance with Part 9.
 2. All activities shall be documented daily (time, material tickets, invoices, etc.) by the Project Coordinator, agreed upon with the Contractor, and submitted to the Project Engineer.
 3. No claims for force account work will be accepted where the Project Engineer had not specifically directed the Contractor.
 4. Skilled and common labor shall be paid for in accordance with the approved "Labor & Equipment Rates" submittal. Labor classifications shall be approved by the Project Engineer prior to beginning force account work.
 5. Materials and supplies used are to be listed on invoices. Copies of invoices which show all the materials, quantities, costs, etc. utilized in the force account work shall be submitted to the Project Coordinator within two (2) business days of the date of the activity.
 6. Equipment shall be paid for in accordance with the approved "Labor & Equipment Rates" submittal. Equipment shall be approved by the Project Engineer prior to beginning force account work.
 7. The Project Engineer shall determine the total cost of the force account work, including 15% overhead and profit.
 8. Force account work shall be authorized by the Project Engineer in writing.

8.02 Unauthorized Changes in the Work

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Part 2, except in the case of an emergency as provided in Part 4 or in the case of uncovering Work as provided in Part 11.
- B. Work performed without staking and/or approved cut sheets, and/or work performed beyond the Project limits shall be considered as unauthorized and at the expense of the Contractor. Any unauthorized work may be ordered removed and/or replaced by the Project Engineer at the Contractor's sole expense.

8.03 Execution of Change Orders

- A. Owner and Contractor shall execute Change Orders as recommended by Project Engineer authorizing:
 - 1. Changes in the Work, including but not limited to: changes requested by Owner, changes required due to acceptance of defective work as outlined in Part 11, Owner's correction of defective work as outlined in Part 11, and changes requested by Contractor and approved by Project Engineer;
 - 2. Changes in the Contract Price and/or Contract Time which are agreed to by the Parties, including any undisputed costs and/or time for Work actually performed in accordance with a Work Change Directive; and;
 - 3. Changes in the Contract Price and/or Contract Time incorporating the written decision of the Project Engineer resolving any claims or disputes. Contractor reserves the right to delay signing the Change Order while appealing the Project Engineer's written decision regarding the claim or dispute. However, Contractor shall continue to perform the Work and adhere to the project schedule, as provided in Part 4.

8.04 Notification to Surety

- A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be Owner's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change. Owner shall simultaneously provide Contractor with a copy of such notice. Surety shall furnish Owner proof of such adjustment.

8.05 Claims and Disputes

- A. Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the Contractor to Project Engineer no later than thirty (30) calendar days after the start of the event. Contractor shall provide Project Engineer with supporting data within sixty (60) calendar days after the start of the event (unless the Project Engineer allows additional time for submittal of additional or more accurate data). A Claim for an adjustment in Contract Price and/or Contract Time shall be prepared in accordance with the provisions of Part 10. Each Claim shall be accompanied by a written statement that the adjustment claimed is the entire adjustment to which the Contractor believes it is entitled.

B. Project Engineer will render a formal decision in writing within thirty (30) calendar days after receipt of the last submittal of the Contractor unless additional time is required. Project Engineer's written decision on such Claim, dispute, or other matter will be final and binding upon Owner and Contractor unless:

1. The Contractor submits a written appeal within 15 calendar days of receipt of Project Engineer's written decision. Upon receipt of the written appeal, Project Engineer shall coordinate discussions between Owner, Contractor, and Project Engineer in an attempt to reach resolution. Failure to reach resolution will result in the claim being settled in accordance with the dispute resolution procedures set forth in Part 14; or
2. If Project Engineer does not issue a formal decision in writing within 30 calendar days a decision denying the Claim in its entirety shall be deemed to have been issued.

C. No Claim for an adjustment in the Contract Price or Contract Time shall be valid if not submitted in accordance with this section.

PART 9. COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

9.01 Cost of the Work

A. The term "Cost of the Work" means the sum of all costs 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 shall 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 Project Engineer, such costs shall be in amounts no higher than those prevailing in the locality of the Project, 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 Project Engineer and Contractor. Such employees include without limitation superintendents, foremen, and other personnel employed full time at the Site. 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 Project Engineer.
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. Should the Owner deposit funds with the Contractor, the Contractor shall provide copies of invoices for rental equipment and agreements. Further, all trade discounts, rebates, 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. 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, 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.
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. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remains the property of Contractor.
 - b. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with the rental agreements 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.
 - c. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.
 - d. 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.
 - e. 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 established in accordance with the Contract Documents), 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.
 - f. The cost of utilities, fuel, and sanitary facilities at the Site.

- g. The cost of premiums for all Bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. The term "Cost of the Work" shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general 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, all of which are to be considered administrative costs.
2. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
5. 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.
6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly in this Part.
7. Extended office overhead (except office and temporary facilities at the site) or lost profit associated with delays of any type. Minor expenses such as long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work. Such costs are considered to be administrative costs covered by Contractor's fee.
8. Any and all costs, which arise from any suspension, delay, or interruption to a Work activity or the Work as a whole, to the extent that performance would have been so suspended, delayed, or interrupted for reasons beyond the control and without the fault or negligence of Owner. Examples of such situations include, but are not limited to, instances where compensable delays occur concurrently with either excusable or inexcusable delays and instances where such combinations of delays, even when not concurrent, individually give rise to similar impacts on the completion of the Work.

C. When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Contract Documents. 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 Part 10.

9.02 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Bid Form. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor shall be made by Project Engineer subject to the provisions of Part 6.
- B. Each unit price shall include an amount to cover the Contractor's overhead and profit for each separately identified item.
- C. All unit prices submitted with the Contractor's bid proposal shall be held firm against any increase for the duration of Contract.

9.03 OMITTED

PART 10. CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

10.01 Change of Contract Price

- A. The Contract Price may only be change by a Change Order. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price shall be determined as follows:
 - 1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Part 9); or
 - 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, by mutually agreed unit prices or lump sum (which may include an allowance for overhead and profit); or
 - 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a unit price or lump sum is not reached, on the basis of the Cost of the Work (subject to provisions of Part 9) plus a Contractor's fee for overhead and profit.
- B. Contractor shall establish and maintain records in accordance with generally accepted accounting practices and submit in a form acceptable to Owner an itemized cost breakdown together with supporting data. Owner may audit Contractor's records related to such costs during normal business hours.
- C. The Contractor's total fee for overhead and profit shall not exceed 15% of the value of the additional work.
- D. No increase in Contract Price shall be granted for Inexcusable Delays, unless otherwise agreed to by Owner.

10.02 Change of Contract Time

- A. The Contract Time may only be changed by a Change Order. Any adjustment in the Contract Time shall be based on the following:
 - 1. Additional Work requested by Owner,
 - 2. Work deleted from Contract by Owner,
 - 3. Excusable delay, as approved by the Project Engineer, or
 - 4. Approved written request submitted by Contractor.
- B. Excusable Delays in the completion of the entire Work or specified part thereof shall not give rise to default under the Contract by either party. Any such delays shall not entitle Contractor to any additional compensation. The sole remedy of Contractor shall be an extension of Contract Time pursuant to this Part 10.
- C. No extensions of Contract Time shall be granted for Inexcusable Delays, unless otherwise agreed to by Owner.
- D. Except as otherwise provided herein Contractor shall not be entitled to recover damages due to delays of any type.
- E. In presenting justification for any adjustment of Contract Time, Contractor shall not rely on their initial sequencing of the Work but shall rely on the updated schedule resulting from the delay or change in Work. The Project Engineer may request the Contractor submit an updated schedule prior to approval of the request. The schedule shall be submitted in accordance with Section 01310 of these Contract Documents. Contractor shall demonstrate a reasonable effort to reschedule any Work which is delayed by changes or unforeseeable conditions so as to minimize any additional time and cost to Owner.

10.03 Delays Beyond Contractor's Control

- A. Where Contractor is prevented from completing any part of the Work within the Contract Time due to delay beyond the control of Contractor, the Contract Time will be extended in an amount equal to the time lost due to such delay if a Claim is made in accordance with Part 8. Delays beyond the control of Contractor shall include, but not be limited to, acts of neglect by Owner, acts of neglect of utility Owners or other Contractors performing other work, fires, floods, epidemics, weather delays, or acts of God.

10.04 Delays Within Contractor's Control

- A. The Contract Time will not be extended due to delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor. Should the Contractor choose to relocate to an alternate area within the project to continue the Work, it shall be deemed as a delay within the Contractor's control and shall be at no cost to the Owner.

10.05 Delays Beyond Owner's and Contractor's Control

- A. Where Contractor is prevented from completing any part of the Work within the Contract Time due to delay beyond the control of both Owner and Contractor, an extension of the Contract Time in an amount equal to the time lost due to such delay shall be Contractor's sole remedy for such delay.

10.06 Delay Damages

- A. In no event shall Owner be liable to Contractor, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:
1. Delays caused by or within the control of Contractor; or
 2. Delays beyond the control of both Owner and Contractor.
- B. Nothing in this section bars a change in Contract Price pursuant to this Part 10 to compensate Contractor due to delay, interference, or disruption directly attributable to actions or inactions of Owner or anyone for whom Owner is responsible.

10.07 Computation of Time

- A. Extensions to the Contract Time shall be granted in calendar days. If at the end of the project the final completion date falls on a non work day, the Project Engineer may, at their sole discretion, grant additional time so that the final completion date is a work day.

PART 11. TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

11.01 Notice of Defects

- A. Prompt notice of all defects shall be given to Contractor upon discovery. All defective Work whether or not in place may be rejected, corrected, or accepted as provided in this Part 11 at the Fayetteville Public Works sole discretion.

11.02 Access to Work

- A. Owner, Design Engineer, Design Engineer's Consultants, other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests shall have access to the Site and the Work for their observation, inspecting, and testing. Contractor shall provide proper and safe conditions for access and advise them of Contractor's Site safety procedures and programs so that they may comply.

11.03 Uncovering Work

- A. If any Work requiring inspection is covered prior to Owner's approval, it shall be uncovered for Owner's inspection at Contractor's expense, unless otherwise authorized by Owner.
- B. If Project Engineer considers it necessary that covered Work be inspected or tested, Contractor, at Project Engineer's request, shall uncover or otherwise make available for inspection or testing that portion of the Work in question. The Contractor shall furnish all necessary labor, material, and equipment. If it is found that such Work is defective, Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of

work of others); and Owner may be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim as provided in Part 8. If such Work is not found to be defective, Contractor may be allowed an increase in the Contract Price or an extension of the Contract Time or both, directly attributable to such uncovering, exposure, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefore as provided in Part 8.

11.04 Owner May Stop the Work

- A. If the Work is defective, or if Contractor's operations endanger or cause unapproved disruptions to the general public or facility, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work or any portion thereof, until the cause for such order is eliminated, and Contractor shall have no basis for making a claim thereof; however, this right of Owner to stop the work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor or any other party.

11.05 Temporary Suspension of Work

- A. The Project Engineer shall have the authority to suspend the work, wholly or in part, for such period or periods as deemed necessary, due to conditions as are considered unfavorable for the proper continuation of the Work. If it should become necessary to stop all work for an indefinite period, the Contractor shall store all materials in such manner that they will not deteriorate or become damaged in any way, and he shall take every precaution to prevent damage or deterioration of the Work performed, provide suitable drainage by opening ditches, shoulder drains, etc., and erect structures where necessary. The Contractor shall not suspend work without authority. Neither the failure of the Project Engineer to notify the Contractor to suspend work on account of unfavorable conditions nor permission by the Project Engineer to continue work during unfavorable conditions shall be a cause for the acceptance of any work which does not comply in every respect with these Contract Documents.

11.06 Correction or Removal of Defective Work

- A. Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Project Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. The Public Works Commission reserves the right, should an error be discovered in the estimate or conclusive proof of defective work or materials used by or on the part of the Contractor be discovered either before or after the final payment has been made, to claim and remove by process of law such sum or sums as may be sufficient to correct the error or make good the defects in the work and materials.

11.07 Correction Period

- A. All work completed under these Contract Documents shall be guaranteed by the Contractor for a period of one (1) year from the date of final acceptance. During that period, all defects discovered in the work (to include land or other areas made available to the Contractor), as determined by the Owner, shall be removed and replaced in a satisfactory manner by the Contractor at no cost to the Owner. All work shall be done in accordance with Owner's standards. The Owner may conduct an independent inspection, at their sole expense, of the completed work prior to the completion of the one (1) year warranty period.

Should the Owner's inspection determine that the work is not in accordance with these Contract Documents; the Contractor shall mobilize and make all necessary repairs at no expense to the Owner. The Contractor will receive written notification from the Owner, and be allowed the chance to review any available inspection pictures or other documentation. The Contractor shall respond to the Owner with a plan of action within 30 calendar days of receiving notification. The Contractor shall mobilize and begin to complete the work within 60 calendar days of receiving notification. The Contractor shall:

1. Repair such defective land or areas.
2. Correct such defective Work or, if the defective Work has been rejected by the Owner, remove it from the project and replace it with Work that is not defective.
3. Satisfactorily correct, repair, remove, or replace any damage to other Work, damage to the work of others, and damage to other land or areas.

If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the Owner reserves the right to contract with another party to complete the warranty work, at the sole expense of the Contractor. All claims, costs, losses, and damages (including but not limited to all fees and charges of design professionals, attorneys, and other professionals and all court, arbitration or other dispute resolution costs arising out of or relating to such correction or repair or such removal and replacement of work of others) shall be paid by the Contractor.

The warranty period stated is specifically for the work installed by the Contractor. Any collateral damage discovered during the warranty shall be investigated and the Contractor will be required to respond if the damage is determined to have occurred during the construction process.

- B. In special circumstances where a portion of the Work is placed in service before Final Completion of all the Work, the correction period for that portion may start from an earlier date if so provided in the Contract Documents or by written authorization from the Project Engineer.
- C. Where defective Work including restoration (and damage to other Work resulting therefrom) has been corrected, the correction period with respect to such Work shall be extended for an additional period of one year after such correction has been satisfactorily completed.
- D. Contractor's obligations under this Part 11 are in addition to any other obligation or warranty. The provisions of this Part 11 shall not be construed as a substitute for, a waiver of, the provisions of any applicable statute of limitation or repose.

11.08 Acceptance of Defective Work

- A. If, instead of requiring correction of defective Work to include restoration, Owner may elect to accept the work. Acceptance of defective work does not relieve the Contractor from fulfilling the warranty requirements of the Contract Documents. Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Project Engineer) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner may be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Part 8. If the acceptance occurs after final payment, an appropriate amount will be paid by Contractor to Owner.

11.09 Owner May Correct Defective Work

- A. If Contractor fails to correct defective Work or to remove and replace rejected Work as required by Project Engineer in accordance with Part 11. A within the time frame provided in the written notification, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven (7) calendar days written notice to Contractor, correct and remedy any such deficiency.
- B. In connection with such corrective and remedial action, the Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment for which Owner has paid Contractor. Contractor shall allow Owner's agents and employees, Owner's other Contractors, and Design Engineer access to the Site to enable Owner to exercise the rights and remedies under this Part 11.
- C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Part 11 shall be charged against Contractor, and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the Work. The Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefore as provided in Part 8. Such claims, costs, losses and damages shall include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Time because of any delay in the performance of the Work attributable to the Owner's rights and remedies under this Part 11.

PART 12. PAYMENTS TO CONTRACTOR AND COMPLETION

12.01 Progress Payments

A. Applications for Payments

1. The Contractor shall verify and coordinate monthly quantities with the Project Coordinator. Quantities shall be based on the work completed as of the last Friday of the month (or the previous business day, should that Friday be a legal Holiday).
2. The Contractor shall prepare and submit a completed pay application to the Project Engineer, including the following documentation:
 - a) Completed sales tax certificate, documenting the sales tax paid and the County paid, for all materials consumed or to be consumed as part of the Work,
 - b) Affidavit E as required by the Disadvantaged Business Enterprise program, and
 - c) Copies of all invoices of materials claimed on the sales tax certificate.

The Contractor shall furnish three (3) copies of the pay application and all supporting documentation.

3. Payment for stored materials shall be allowed.

B. Sales Tax - The following procedure shall be followed relative to the North Carolina Sales Tax applicable to this Project. Contractor shall comply fully with the requirements outlined hereinafter, in order that the Owner may recover the amount of the tax permitted under the law.

1. It shall be the Contractor's responsibility to furnish the Owner documentary evidence showing the material used, sales tax paid, and County paid (County of sale) by the Contractor and each of his Subcontractors. Such evidence shall be transmitted with each pay estimate.
2. The documentary evidence shall consist of a certified statement by the Contractor and each of his Subcontractors individually showing total purchases of materials from each separate vendor and total sales taxes paid each vendor. The Contractor shall submit a certified statement with each pay request, for sales taxes paid during that pay request period. A certified form is required even if no sales tax was paid for pay request period.
3. The Contractor shall not be required to certify the Subcontractor's statements but must obtain the Subcontractor's certification.
4. Contractor shall furnish to Owner invoices or copies of invoices for all materials purchased for said work within pay request period, and such invoices shall state the amount of North Carolina Sales Tax paid for materials, etc.
5. Contractor shall not include any tax paid on supplies, tools, and equipment, which they use to perform their contracts and should include only those building materials, supplies, fixtures, and equipment which actually become a part of the Work.

C. Retainage

1. The Owner shall make monthly payment to the Contractor on the basis of a duly certified and approved estimate for the work performed during the preceding month under the Contract. In accordance with N.C.G.S. 143-134.1, the Owner shall retain 5% of the amount of each monthly periodic payment. The Owner may, after 50% of the work has been completed, consider waiving further retainage on the project upon the following conditions:
 - a. Written consent of surety is received;
 - b. Satisfactory progress is being made on the Project; and
 - c. Prior to 50% completion, any nonconforming work identified in writing by the Owner has been corrected by the Contractor and approved by the Owner.
2. The project shall be deemed 50% complete when the Contractor's gross pay estimate equals or exceeds 50% of the value of the Contract. Once the project is 50% complete and it is determined the Contractor is performing satisfactorily; the Project Engineer will not retain any further retainage from periodic payments due to the Contractor. At that point, retainage will be held at 2.5% of the Contract value, until either the Contract is completed or the Project Engineer deems it necessary to reinstate retainage.
3. The Owner reserves the right to continue to retain payment, even in the event the Contractor's work is satisfactory, in order to ensure a total of 2.5% retainage over the life of the project (Note – 2.5% retainage over the life of the project is equal to 2.5% of the Contract value). The Owner reserves the right to withhold additional payments for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the Owner or reasonable evidence that a third-party claim will be filed. If retainage is discontinued or reduced, per the NCGS the Project Engineer can, reinstate retainage if it has been determined the Contractor's performance is unsatisfactory. The Project Engineer can reinstate retainage for each subsequent pay estimate the maximum amount of 5%.

D. Review of Applications

1. Project Engineer will, within ten (10) business days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Project Engineer's reasons for refusing to recommend payment. In the latter case, Contractor shall make the necessary corrections and resubmit the Application.
2. Project Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Project Engineer to Owner, that to the best of Project Engineer's knowledge, information and belief:
 - a. The Work has progressed to the point indicated;
 - b. The quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Final Completion, to the results of any subsequent tests

called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Part 9, and to any other qualifications stated in the recommendation); and

- c. The conditions precedent to Contractor being entitled to such payment appears to have been fulfilled.
3. By recommending any such payment Project Engineer shall not be deemed to have represented that:
 - a. Inspections made to check the quality and/or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Project Engineer in the Contract Documents; or
 - b. There may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Project Engineer's review of Contractor's Work for the purposes of recommending payments, nor Project Engineer's recommendation of any payment, including final payment, will impose responsibility on Project Engineer to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work. Additionally, said review or recommendation will not impose responsibility on Project Engineer to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any liens.
5. Project Engineer may refuse to recommend the whole or any part of any payment if, in Project Engineer's opinion, it would be incorrect to make the representations to Owner referred to in this Part 12. Project Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Project Engineer's opinion to protect Owner from loss because:
 - a. The Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. The Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Part 11; or
 - d. Project Engineer has actual knowledge of the occurrence of any of the events outlined in Part 13.

E. Payment Becomes Due

1. Twenty (20) business days after presentation of the Application for Payment to Owner with Project Engineer's recommendation, the amount recommended will (subject to the provisions of this paragraph) become due, and when due will be paid by Owner to Contractor.

F. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by the Project Engineer because:
 - a. Liens have been filed in connection with the Work, except where Contractor has delivered a specific Bond satisfactory to Owner to secure the satisfaction and discharge of such liens;
 - b. There are other items entitling Owner to a reduction of the amount recommended; or
 - c. Owner has actual knowledge of the occurrence of any of the events outlined in Part 13.
2. If Owner refuses to make payment of the full amount recommended by Project Engineer, Owner must give Contractor written notice stating the reasons for such action and pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, upon satisfactory resolution of the issue.

12.02 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all liens.

12.03 Partial Utilization

- A. Use by Owner of any completed part of the Work which has specifically been identified in the Contract Documents or as authorized in writing by Project Engineer, and is a separately functioning and usable part of the Work that can be utilized by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, may be accomplished prior to Final Completion of all the Work subject to the following conditions;
 1. Owner and Contractor shall make an inspection of that part of the Work to determine its status of completion. If Project Engineer does not consider that part of the Work to be complete, Project Engineer will notify Contractor in writing. If Project Engineer considers that part of the Work to be complete, the Project Engineer will notify the Contractor in writing that the Owner will begin partial utilization of that Work.

2. The Contractor remains responsible for completing or fulfilling all contractual obligations remaining to the Work being utilized.
3. No occupancy or separate operation of part of the Work will be accomplished prior to Contractor's compliance with the requirements of these Contract Documents pertaining to insurance.

12.04 Final Completion

- A. Completed work is all work outlined in these Contract Documents that has been installed, tested, inspected, disinfected, backfilled, paved, all above ground restoration has been performed, and Contractor has completed all the Work in an acceptable manner in accordance with the terms of the Contract. ***All work outlined in these Contract Documents shall be completed, prior to the Contractor requesting an inspection by the Project Coordinator.***
- B. When the Project Coordinator deems the project complete and ready for final inspection, the Project Coordinator shall notify the Project Engineer. The Project Engineer shall schedule a final inspection between the Owner and Contractor. During the final inspection any items documented shall be compiled in a final punch list and provided to the Contractor within five (5) business days. The Contractor shall be required to complete each item in the final inspection punch list within 30 calendar days of receipt. Failure to complete the punch list in that time may result in liquidated damages being assessed. The project will not be considered complete until all punch list items are completed and accepted, unless otherwise determined by the Project Engineer. All punch list items shall be completed prior to release of final payment. Once Project Engineer considers the Work to be complete a written notice of acceptance will be issued.

12.05 Warranty Period

- A. The warranty period will cover a corrections period of one full year after the Final Completion date. The Contractor shall submit a warranty agreement form which guarantees to the Project Engineer /Owner that all Work has been completed in accordance with the Contract Documents and will not be defective. The Contractor shall address all defective work in accordance with Part 11.
- B. Neither the final certificate of completion, final payment, acceptance of the premises by the Owner, nor any provisions of the Contract, nor any other act or instrument of the Owner or Project Engineer shall relieve the Contractor from responsibility for negligence, or faulty materials, or workmanship, or failure to comply with these Contract Documents.

12.06 Final Payment

- A. Application for Final Payment
 1. After Contractor has, in the opinion of Project Engineer, satisfactorily completed all items identified during the final inspection and has provided all completion documents required in accordance with the Contract Documents the Contractor may make application for final payment.
 2. The final Application for Payment shall be accompanied by:
 - a. All documentation called for in the Contract Documents;

- b. AIA document G707, "Consent of Surety Company to Final Payment;"
 - c. Complete and legally effective releases or waivers of all Lien rights arising out of or Liens filed in connection with the Work, (AIA document G706A, "Contractor's Affidavit or Release of Liens" and AIA document G706, "Contractor's Affidavit of Payments of Debts & Claims", or similar form) in accordance with Chapter 44A of the North Carolina General Statutes.
3. Notwithstanding any other provision of these Contract Documents to the contrary, the Owner is under no duty or obligation whatsoever to any Subcontractor, laborer, or other party to ensure that payments due and owed by Contractor to any of them are or will be made. Such parties shall rely only on Contractor's surety bonds for remedy of nonpayment by Contractor.

B. Review of Application

1. Once the Project Engineer is satisfied that the Work has been completed and Contractor's obligations under the Contract Documents have been fulfilled, Project Engineer will, within ten (10) business days indicate in writing Project Engineer's recommendation of payment and present the Application for Payment to Owner for payment. Otherwise, Project Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty (30) calendar days after the presentation to Owner of the Final Application for Payment the amount recommended by Project Engineer will become due and, when due, will be paid by Owner to Contractor.

12.07 Final Completion Delayed

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Project Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment and recommendation of Project Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted.

12.08 Liquidated Damages

- A. If the progress of completion of the Work is delayed by any fault, neglect, act or failure to act, on the part of the Contractor or anyone acting for or on the behalf of the Contractor so as to cause any additional costs, expense, liability or damage to the Owner or any damage or additional cost or expense for which the Owner may or shall become liable, the Contractor shall and does hereby agree to compensate the Owner for, and to indemnify the Owner against all such costs, expenses, liabilities and damages.
- B. For each consecutive calendar day of delay beyond the time specified for the Contract Completion date, the Contractor shall be assessed liquidated damages as indicated in the Bid Form. Liquidated damages will be withheld from amounts which may be or may become payable to the Contractor by the Owner. Should the cost of these sustained damages exceed the amounts owed by the Owner, the Contractor shall pay the difference to the Owner.

12.09 Waiver of Claims

- A. The making and acceptance of final payment will constitute:
 - 1. A waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents.
 - 2. A waiver of all Claims by Contractor against Owner.

PART 13. SUSPENSION OF WORK AND TERMINATION

13.01 Owner May Suspend Work

- A. At any time and without cause, Owner may suspend the Work or any portion thereof by providing written notice to Contractor. Contractor shall resume the Work as directed by Owner. Contractor may be allowed an adjustment in the Contract Price or an extension of the Contract Time, or both, directly attributable to any such suspension if Contractor makes a Claim therefore as provided in Part 8. An adjustment to the Contract shall only be considered if the Contractor was delayed for a time period greater than twenty-four (24) hours.
- B. If Owner stops work in accordance with Part 11, or excludes Contractor from the Site, suspends Contractor's services, or suspends the Work or any portion thereof because of Contractor's failure to perform the Work in accordance with the Contract Documents, Contractor shall not be entitled to an extension of Contract Time.

13.02 Owner May Terminate for Cause

- A. The occurrence of any one or more of the following events will justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents;
 - 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 - 3. Contractor's disregard of the authority of Owner; or
 - 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified above occur, Owner may, after giving Contractor and the surety seven (7) calendar days written notice, terminate the services of Contractor, exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work. In such case, Contractor shall not be entitled to receive any further payment.

- C. If all claims, costs, losses, and damages (including but not limited to all the fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other disputed resolution costs) exceeds the unpaid balance of the Contract, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Project Engineer and, when so approved, by Project Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- D. Where Owner has terminated Contractor's services, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- E. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or from such termination.

13.03 Owner May Terminate For Convenience

- A. Upon seven (7) calendar days written notice to Contractor the Owner may, without cause and without prejudice to any other right or remedy of Owner, elect to terminate the Contract. In such case, Contractor shall be paid (without duplication of any items):
 - 1. For completed and approved Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. For expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. For all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. For reasonable expenses directly attributable to termination as approved by Owner.

13.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, the Work is suspended for more than ninety (90) consecutive calendar days by Owner or under an order of court or other public authority, or Project Engineer fails to act on any Application for Payment within thirty (30) calendar days after it is submitted, or Owner fails for thirty (30) calendar days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven (7) calendar days written notice to Owner, and provided Owner does not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Part 13. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Project Engineer has failed to act on an Application for Payment within thirty (30) calendar days after it is submitted, or Owner has failed for thirty (30) calendar days to pay Contractor any sum finally determined to be due, Contractor may, seven (7) calendar days after written notice to Owner, stop the Work until payment is made of all such amounts due Contractor, including

interest thereon. The provisions of this paragraph are not intended to preclude Contractor from making a Claim under Part 8 for an adjustment in Contract Price or Contract Time or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

- B. The words "suspended" and "suspension" in Part shall not refer to the legal doctrine known as "constructive suspension" but shall only refer to a stoppage of the Work by express order of Owner without cause.

PART 14. DISPUTE RESOLUTION

14.01 Methods and Procedures

- A. Binding arbitration will not be used as a means for settling claims, disputes, and other matters. However, the parties shall attempt to resolve any claims, disputes, or other matters by good faith negotiation. If good faith negotiation is unsuccessful, litigation may be brought as provided in this Part no later than sixty (60) calendar days after Final Completion.
- B. The Contract Documents shall be construed, governed, and interpreted under the law of the State of North Carolina. Should any dispute arise out of or pertaining to the performance of the Contract Documents, such disputes shall be litigated and decided either solely in the District Court Division or in the Superior Court Division of the General Court of Justice of the County of Cumberland, North Carolina. This forum selection clause is mandatory and binding on all parties.

PART 15. MISCELLANEOUS

15.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

15.02 Cumulative Remedies

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

15.03 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the

Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract.

15.04 Controlling Law

- A. This Contract is to be governed by the law of the State of North Carolina. All claims, disputes, and other matters in question arising out of, or relating to, this Contract not resolved by negotiation shall be resolved by legal action instituted and tried in the General Courts of North Carolina under North Carolina law with venue for trial being Cumberland County.

15.05 Historical or Archaeological Deposits

- A. If, during the course of construction, evidence of deposits of historical or archaeological interest are found, Contractor shall immediately cease operations affecting the find and shall notify Owner, who shall notify the State Historic Preservation Officer. No further disturbance of the deposits shall ensue until Contractor has been notified by Owner that he may proceed. Owner will issue a Notice to Proceed only after the state official has surveyed the find and made a determination to Owner. Compensation to Contractor, if any, for lost time or changes in construction to avoid the find, shall be determined in accordance with changed conditions or Change Order provisions of the Contract Documents. (Reference: 80 Stat 915, 16 USC 470, and Executive Order No. 11593 of May 31, 1971.)

15.06 Antitrust

- A. By entering into a Contract, Contractor conveys, sells, assigns, and transfers to Owner all rights, title, and interest in and to all causes of action Contractor may now have or hereafter acquire under the antitrust laws of the United States and the State of North Carolina relating to the particular goods or services purchased or acquired by Owner under the said Contract.

15.07 Lien

- A. It is expressly agreed that after any payment has been made by Owner to Contractor for work done, or labor or material supplied as required and described in the Contract, Owner will have a lien upon all material delivered to the site by or for Contractor or any Subcontractor.

15.08 Employment Discrimination

- A. During the performance of this Contract, Contractor agrees as follows:
1. Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, disability, or national origin, except where religion, sex, disability, or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of Contractor. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 2. Contractor, in all solicitations or advertisements for employees placed by or on behalf of Contractor, will state that such Contractor is an equal opportunity employer.
 3. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for meeting the requirements of this section.

B. Contractor will include the provisions of the foregoing Paragraphs 1, 2, and 3 in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each Subcontractor or vendor.

***** END OF SECTION *****

**DIVISION 1
GENERAL REQUIREMENTS**

01000 – SPECIAL PROVISIONS

GENERAL

These Special Conditions are intended to supplement and amplify the requirements of this Contract. Where any article or item of this Contract is modified or deleted by this section, the remaining unaltered provisions of that article, paragraph, subparagraph, or clause shall remain in effect. In the event of a conflict, these Special Conditions shall take precedence.

1. Customer Service

The Contractor is expected to make every effort to reduce the impact of their operation to PWC's operation and maintenance of the water and sanitary sewer systems, and the affected residents within the project area. Full cooperation and coordination with PWC personnel and residents is expected. It is expected that the Contractor will promptly respond to any concerns voiced by residents and/or PWC personnel, and make every effort to resolve them immediately. Providing exemplary customer service shall be incidental to this Contract, and no additional payment will be made for this service.

The Contractor at all times shall conduct the work in such a manner as to ensure the least obstruction to traffic practicable. The convenience of the general public and of the residents and businesses along and adjacent to the Work shall be provided for in a satisfactory manner, consistent with the operation and local conditions. The Contractor shall construct and maintain any necessary ramps, boardwalks, or other means to maintain pedestrian traffic. Costs for such work shall be incidental to the unit prices bid. The Contractor shall at all times cooperate with the public and merchants as affected by the construction operations and shall endeavor to maintain good public relations at all times.

The Contractor shall make every effort to minimize the impacts of their operation on the residents. The Contractor shall schedule their operations to minimize the likelihood of equipment operating throughout the night and/or on weekends in residential areas. Equipment shall not be left in yards during weekends, unless the Contractor has specific written permission from the property owner.

2. Cleanliness During Construction

The Contractor shall perform a daily clean-up of all dirt, debris, scrap materials and other disposable items resulting from the Contractor's operations, whether on-site or off-site. The Contractor shall remove all construction equipment, barricades, tools, surplus materials, etc. no longer required at the site. No open accumulation of refuse, surplus or scrap materials will be permitted. Failure of the Contractor to maintain a clean site will be basis for the Public Works Commission to issue a written notice of non-compliance with the Contract. Should that notice to correct not be complied with within twenty-four (24) hours, the Public Works Commission may authorize the clean-up to be performed by others and the costs

shall be deducted from monies due the Contractor. The Contractor shall legally dispose off-site all waste materials and other excess materials resulting from construction. No separate payment shall be made for maintaining a clean project site.

The Contractor shall control the dust in all areas of the project limits for the entire duration of construction. Dust control may be accomplished by use of either water or dust control materials, or as directed by the Owner. No separate payment shall be made for dust control.

3. Working Times

The Contractor shall limit their operations to Monday through Friday, during normal business hours. Regular working hours shall not exceed 40 hours per week, 8 hours per day (between 7 a.m. and 5:00 p.m.), Monday through Friday. No work, unless otherwise required due to an emergency and authorized by the Public Works Commission, shall be performed on weekends, after hours, or on Holidays observed by the Public Works Commission without prior written approval from the Public Works Commission. Requests to work other than regular working hours or legal Holidays must be submitted in writing to the Public Works Commission a minimum of two (2) full business days in advance in order to arrange for appropriate personnel to be at the site of the Work.

Legal holidays observed by the Public Works Commission include New Year's Day, Martin Luther King's Birthday, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving (2 days), and Christmas (2 days).

4. Materials

All materials to be utilized are to be in new condition. Materials are to be stored in strict accordance with the manufacturer's directions. Materials are to be of the type and brand specified within these Contract Documents. **No alternative or substitute materials shall be considered prior to award of the Contract.**

The Contractor shall submit all requests to utilize materials other than specified to the Public Works Commission for review. The Contractor shall be responsible for providing all required documentation necessary for the Public Works Commission to review and make a determination if the substitute material meets the required specification. All information shall be submitted in accordance with Section 01300 – Submittals.

The Contractor will be responsible for providing documented proof that the proposed substitution has a proven record of performance when used in the intended application as confirmed by actual field test(s) or by successful installations. The Public Works Commission reserves the right to reject any such proposed changes or substitutions at their sole discretion, and is under no obligation to justify their decision.

5. Equipment

- a. The Contractor shall be equipped with equipment perfectly adaptable for the type of construction required; all such equipment shall be of sufficient capacity to handle the work in an expeditious and safe manner. The Public Works Commission reserves the right to deny the use of inadequate equipment or of equipment not capable of performing the work in an acceptable manner.
- b. With respect to the foregoing, it is the intent of the Public Works Commission to require that the Contractor be equipped to perform the work shown and specified, expeditiously and in accordance with the best modern practice.

6. Warranty Against License Agreements

The Contractor shall warrant to the Public Works Commission that the equipment used on this Contract, where covered by patents or license agreements, is furnished in accordance with such agreements and that the prices included herein cover all applicable royalties and fees in accordance with such license agreements. The Contractor shall defend, indemnify, and hold the Public Works Commission harmless from and against any and all costs, loss, damage, or expense arising out of or in any way connected with any claim of infringement of patent, trademark, or violation of license agreement.

7. Limits of Construction

The Contractor shall confine their operations to the existing permanent and temporary easements and within public rights-of-way. The Contractor shall adhere to the requirements of the approved NCDOT encroachment agreements. The Contractor may use additional area for staging, storage or other operations, provided that written permission is obtained from the property owner and all disturbed areas are restored.

8. Agreements with Property Owners

Any and all agreements between the Contractor and individual property owners for work, services, rent of staging areas, etc. located outside of any easements or public rights-of way shall not obligate the City of Fayetteville, the Public Works Commission, or the Design Engineer in any manner. Prior to performing any work on private property, which could remotely infer the Contractor acting on behalf of the Public Works Commission, the Contractor shall furnish to the Public Works Commission a signed and witnessed statement executed by the Property Owner acknowledging that the City, the Public Works Commission, and Design Engineer are not liable for any agreements between the Property Owner and the Contractor, and that the Contractor shall hold harmless and defend the City, the Public Works Commission, and the Design Engineer from all claims, damages, etc. Additionally, the Contractor shall have the responsibility to secure any and all agreements with property owners for any actions taken by their Subcontractors.

Prior to release of final payment, the Contractor shall obtain written releases from the property owners for satisfaction, completion, and restoration. Copies of those written releases shall be submitted to Public Works Commission with the final pay application.

The Contractor bears complete responsibility for any damage to private properties outside of the PWC easements and/or rights-of-way.

9. Disposal of Debris

The Contractor shall properly dispose of all debris resulting from their operations, in accordance with applicable Federal, State, and local laws, regulations, and rules.

10. Staging Areas

The Contractor shall be required to secure staging areas for storing materials, equipment, etc. All costs, such as rent, restoration, erosion control measures and permit fees shall be the responsibility of the Contractor. The location of the staging yard shall comply with all Federal, State, and local regulations.

The Contractor is responsible for complying with all applicable local, state, and federal regulations related to the operation of staging areas.

Proper measures, to include total secondary containment, shall be used for fuel storage and to prevent spillage. The Contractor shall not stockpile materials or place fill dirt on any lot without approval from the property owner. Should the Contractor's stockpiles create drainage problems, the Contractor shall construct drainage improvements at his expense as directed by the Owner and/or Project Coordinator, or relocate the stockpile(s).

11. Submittals

The Contractor shall provide submittal information as outlined below, and in accordance with Section 01300 of these Contract Documents. The Contractor shall not perform any portion of the Work requiring submittal and review until the respective submittal has been approved by the Engineer. Work performed prior to review and acceptance shall be at the Contractor's risk.

The Contractor shall submit to the Engineer six (6) copies of all required submittal data for review and approval. The Contractor shall furnish, prior to use of the materials, satisfactory written certification of his compliance with the manufacturer's standards for all materials, conformance with the methods of the manufacturer, and accordance with all standards specified and referenced within these specifications. If requested by the Engineer, the manufacturer of materials, equipment, or product shall submit evidence of having consistently produced materials of satisfactory quality and performance for a period of at least two (2) years.

The Contractor shall provide submittals on the following:

- Labor and equipment rates
- Sample property owner agreement
- Executed property owner agreement
- Personnel contact information (to include emergency contact information)
- Proposed schedule

- Traffic control plan
- Pre-construction video and pictures
- Shop drawings, as detailed in Section 01300
- Contractor's safety plan
- All other submittals as required in these Contract Documents

The Engineer shall review and approve, disapprove, or approve with comment. All notifications on the submittals will be provided to the Contractor in writing. The Public Works Commission shall return three (3) marked copies of the submittals to the Contractor.

The Engineer's review of the submittals will cover only general conformity to these Contract Documents, external connections, and dimensions which affect the layout. The Public Works Commission's review does not indicate a thorough review of all dimensions, quantities, and details of the material, equipment, device, or item shown. The Public Works Commission's review shall not relieve the Contractor of the Contractor's sole responsibility for errors, omissions, or deviations in the drawings and data, nor of the Contractor's sole responsibility for compliance with these Contract Documents.

The Contractor shall accept full responsibility for the completeness of each re-submittal. The Contractor shall verify that all corrected data and additional information previously requested by the Engineer are provided on the re-submittal.

When corrected copies are re-submitted, the Contractor shall in writing direct specific attention to all revisions and shall list separately any revisions made other than those called for by Engineer on previous submissions.

Requirements specified for initial submittals shall also apply to re-submittals. Re-submittals shall be made within 30 days of the date the letter returning the material to be modified or corrected, unless within 14 calendar days the Contractor submits an acceptable request for an extension of the stipulated time period, listing the reasons the re-submittal cannot be completed within that time.

Any need for more than one (1) re-submission, or any other delay in obtaining the Engineer's review of submittals, will not entitle the Contractor to an extension of the contract duration, unless the delay of the Work is directly caused by a change in the Work authorized by a Change Order or by failure of the Engineer to review any submittal within the submittal review period specified herein and to return the submittal to the Contractor.

12. Protection of Existing Utilities

The Contractor shall take every precaution to guard against any or all damage to existing structures, pipe lines, and/or equipment of the utility owner. Any damage to existing structures and/or pipe lines shall be the direct responsibility of the Contractor. Damage shall be replaced and/or repaired by the Contractor as directed by the utility owner, or the value of such deducted from any monies due the Contractor under this Contract.

The utility owner shall supervise the Contractor's operation of all valves, gates, and other equipment. Except in case of emergency, the Contractor shall notify the utility owner a minimum of two (2) business days in advance of the need for operation of valves, gates, and other equipment necessary to allow the work to progress.

The Contractor shall in no case permit the introduction of water from the existing system into any new main without prior approval of the utility owner. The Contractor shall notify the utility owner in advance of commencing the connection to an existing main in order that a utility representative may be present to observe the work.

The Contractor shall notify the utility owner and the PWC Project Coordinator a minimum of 48 hours in advance to coordinate any proposed service interruption. Note: the scheduling and coordination of a water outage within the PWC system shall be done in accordance with Item 5 of these Special Conditions. If an unscheduled service interruption occurs, the Contractor shall immediately notify the utility owner and the Project Coordinator. The Contractor shall immediately commence repairs in accordance with the utility owner's standards.

During the course of construction, some work will need to be performed during non-normal working hours to accommodate the utility owner's operations, traffic, and/or public convenience. The Contractor, Owner and utility owner will determine an acceptable schedule required for work during such hours. The cost of this work shall be included in the base bid.

13. Emergency Response

The Contractor shall maintain a construction crew capable of performing emergency maintenance work 24 hours a day, seven (7) days a week, including all holidays. As a minimum, phone numbers shall be furnished for at least three (3) individuals in responsible charge (capable of making company binding decisions) to be available 24 hours a day, seven (7) days a week, including holidays. The emergency phone numbers and responsible individual's names shall be furnished to the Public Works Commission at the pre-construction conference. The Contractor's designated emergency personnel shall be expected to respond and perform emergency maintenance work immediately, in less than two (2) hours, or the work will be performed by others and all associated costs shall be deducted from the Contractor's payment.

The Contractor shall notify the PWC Dispatcher (910-678-7400) of the problem, the anticipated response time, and the estimated time required to complete the repair work. If the Contractor does not notify the Dispatcher when the work will be completed, a PWC crew will make the necessary repairs or alternate measures will be taken at the Contractor's expense.

14. Pipe Bursting Sub-Contractor (Portion of Contract #3 Alternate Bid)

The pipe bursting sub-contractor shall complete the pipe bursting operation utilizing its own equipment and labor forces. The pipe bursting superintendent shall be an employee of the pipe bursting subcontractor. Second tier pipe bursting contractors shall not be allowed.

Second tier subcontractors shall not be allowed. Violation of this provision of the Contract may be deemed a breach of the Contract.

15. Site Layout and Staking

Construction staking will be performed by the Design Engineer during normal Design Engineer's business hours who will also prepare and furnish construction cut sheets to the Owner and Contractor. The Contractor shall not install any utilities without a cut sheet. All requests for staking will be made by the Contractor to the Design Engineer not less than 96 hours in advance. Staking by Design Engineer shall be limits of clearing, water, sanitary sewer, force main and lift station cut sheets for open cut of utilities and establishing temporary benchmarks.

Utilities shall be installed at the locations and elevations indicated on the cutsheets where necessary unless otherwise approved by the Owner. Should a conflict arise between the Contract Drawings and the cutsheets, the cutsheets shall take precedence. The Contractor shall verify invert elevations of all water mains, sewer force mains, sewer laterals, manholes and lift station by instrument.

Horizontal Directional Drill (HDD) survey tools and guidance system survey shall be Contractor responsibility. Design Engineer will not perform any survey necessary for HDD operations.

16. Pre-Construction Video

The Contractor shall complete a pre-construction video inspection of the project area, to document pre-existing conditions. The video shall be in DVD format. The intent of this video is to document the existing project conditions: the driveways; the condition of the curb and gutter, if any; the condition of the road, the condition of the mailboxes, retaining walls, landscaping, any other resident installed improvements; and the condition of the sod. The Contractor shall also include any easement areas, especially those passing through yards, driveways, etc. The video must identify the house number and the street name in the audio track and visually. The Contractor may also include any pre-existing conditions they want brought to the attention of the Owner by including notes and time position on the index sheet. The Contractor can also include still pictures of the areas, for additional documentation. The video and any other accompanying data shall be made available to the Public Works Commission, upon request. The pre-construction video will be utilized by the Public Works Commission in the resolution of complaints. Therefore, it is in the Contractor's best interest to ensure that the pre-construction video is comprehensive and covers all areas to be impacted by the Work.

17. Monthly Progress Meetings

The Contractor and Owner shall mutually establish a regular time to meet on a monthly basis, for the duration of the project. The meetings shall be held at the Public Works Commission Administration Building at 955 Old Wilmington Road, Fayetteville, NC 28301, and will generally last about an hour. The Contractor's superintendent or designated representative shall attend these meetings. The Contractor's representative shall be knowledgeable of the project, issues that need to be addressed, and be able to make binding decisions for the Contractor.

The purpose of the meeting is to discuss various project related items, including, but not limited to: safety concerns, overall project status and schedule, the Contractor's schedule for the upcoming month, issues that the Contractor and/or Owner need to address, and any proposed or potential change orders.

The cost for the Contractor's representative to attend the monthly meetings shall be included in the unit prices bid.

18. Erosion Control

The provisions of Chapter 139, North Carolina Statutes as amended, Soil Erosion and Sedimentation Control shall be applicable to this project. The minimum requirements for erosion and sediment control are shown on the drawings, based on the anticipated construction methods. The Contractor shall adjust the measures to complement their operations and prevent the transmittal of silt. All necessary erosion control measures shall remain serviceable until the site is restored and stabilized. Upon such time, the Contractor shall remove all temporary measures.

All fees, penalties, fines for non-compliance and all civil actions resulting there from shall be the Contractor's responsibility and shall in no way involve the Public Works Commission. The Contractor shall immediately notify the Public Works Commission of any fine, penalty, or notice of non-compliance by NCDENR. The Contractor may be required to modify or supplement the measures at no additional cost to the Public Works Commission.

In addition to installing and maintaining the appropriate erosion control devices, the Contractor shall maintain a neat and clean jobsite. The Contractor shall take the necessary measures to minimize dust, ensure the streets are clean and free of debris, and other measures as required. The Contractor shall maintain the proper erosion control devices to ensure against erosion. The Contractor shall ensure that the catch basin and inlet protection devices are free of dirt and debris.

Permanent and temporary erosion control measures proposed by the Contractor for staging areas, haul roads, etc. shall be at the Contractor's expense and shall not constitute additional compensation.

The Contractor shall be required to prepare and obtain an approved erosion control plan addressing staging/storage areas, haul roads, borrow pit operations and/or disposal/waste areas. The Contractor shall pay all fees associated with the supplemental plan and a copy of the NCDENR approved plan shall be furnished to the Owner. Work cannot begin until the plan is approved. Permanent and temporary erosion control measures proposed by the Contractor for staging areas, haul roads, etc. shall be at the Contractor's expense and shall not constitute additional compensation.

The Contractor shall be required to display at the job-site office (or readily available on the project site) both the Owner's Erosion Control Permit and the Contractor's Erosion Control Permit.

19. Encroachment

The Public Works Commission has obtained NCDOT encroachments for this project. A copy of the approved encroachments can be found in the appendix of these Contract Documents. The Contractor shall be responsible for complying with the terms and conditions of the approved encroachments.

Prior to any construction within NCDOT rights-of-way, the Contractor shall notify the District Engineer's Office in accordance with the approved encroachment. A copy of the approved encroachment agreement/permit shall be kept on the job site at all times and made readily available if requested. The NCDOT reserves the right to stop any work for noncompliance without claim for extra compensation.

All costs to comply with the terms of the approved NCDOT encroachment shall be the responsibility of the Contractor.

20. Permits

This project is required to have a sanitary sewer permit issued. The approved permit is included in the appendix to these Contract Documents. The Contractor shall have a set of the approved, permitted plans on the jobsite at all times. The Contractor shall make the approved, permitted plans available for inspection by PWC staff.

This project is required to have a permit issued in compliance with Section 404 (Clean Water Act, 33 USC 1344) in accordance with NWP 12. The permit and conditions are included in the appendix.

21. Traffic Control

All traffic control measures shall be in accordance with NCDOT. It shall be the Contractor's responsibility that all requirements set forth by the appropriate agency are adhered to through the duration of the project.

22. Water

The Public Works Commission will allow the Contractor to use water from its existing water system. The Contractor shall utilize proper backflow prevention devices when obtaining water from the Public Works Commission's system. The Contractor shall contact PWC's Environmental System Protection Department at 910-223-4699 to determine the required backflow prevention devices, and to obtain a bulk water use permit. The Contractor shall be responsible for payment of the bulk water permit fee. The Contractor shall provide documentation on the amount of water used for their operations, and provide a monthly statement to the Public Works Commission.

23. Fire Hydrants

Existing fire hydrants shall be accessible to the Fire Department at all times. If fire hydrants are in need of replacement, relocation, or connected to a new water main, the utility owner, Project Coordinator, and

the appropriate Fire Department shall be notified and coordinated with the work. Fire hydrants shall not be taken out of service without the utility owner's written approval.

24. Replacement of Fencing

The Contractor is to replace any fencing disturbed as part of their operations for the work described within these Contract Documents. Replacement of fencing is considered incidental to the operation, and no additional payment will be made for this work. In addition, if temporary fencing is required, the Contractor shall provide such fencing as necessary, at no additional cost to the Public Works Commission. Fences shall be removed and replaced, using new materials.

25. Excess Suitable Material

The Contractor will be required to stockpile excess suitable material on an approved storage yard location. This stockpiled material shall be utilized as select backfill where needed within the project limits. The Contractor shall condition suitable material so that it may be utilized as select backfill within the project limits. Borrow material will only be utilized where satisfactory materials are not available from excavation within the project area and shall be authorized only by the Project Coordinator. Excess material from the project, or staging yard, shall be hauled off and disposed of by the Contractor at his own expense. However, removal of suitable material which could have been utilized within the project limits, shall be accomplished at the Contractor's own risk. Payment for Borrow, or Select Material, will not be made for replacement of suitable material removed from the project limits or staging yard.

26. Water Outages

The Contractor shall schedule a coordination meeting with the PWC Project Coordinator and Project Engineer a minimum of three (3) working days prior to any planned water outage. The coordination meeting shall be conducted prior to any notices being issued. Additionally, the Contractor shall locate (vertically and horizontally) any utilities within the work area, in accordance with these Contract Documents. The locations of all utilities within the work area shall be determined prior to the coordination meeting. Any conflicts with the pending work and the existing utilities shall be identified, and a plan for resolving any conflicts shall be presented.

The purpose of this coordination meeting is to ensure that the Contractor has a good understanding of the requirements related to the pending outage, verify that there are no utility conflicts that will prevent the work from being completed, all equipment is in good working order, all equipment is functional, all materials are on site, all necessary tools are on site, discuss any necessary contingency plans, and any other items necessary to ensure that the Public Works Commission has confidence that the work can be accomplished within the given time period.

Should, for any reason, the Public Works Commission deem that the Contractor is not prepared for the proposed outage, the outage notifications will not be distributed and the outage shall be postponed a minimum of two (2) weeks. The Public Works Commission will provide written notification to the Contractor of this decision. No additional contract time will be granted for this delay. Should the

contract time expire within that two (2) week period, the Public Works Commission reserves the right to assess liquidated damages, as outlined in these Contract Documents.

Once the water outage notifications have been issued, a follow-up coordination meeting with the PWC Project Coordinator shall be held a minimum of 24 hours prior to the scheduled outage. The purpose of this meeting is to verify that the Contractor is prepared to proceed with the outage, and that all equipment, materials, tools, and all other incidentals are on the project site and functioning. If for any reason the Public Works Commission deems that the Contractor is not prepared, the outage shall be postponed and all customers immediately notified of the cancellation. The outage shall be postponed a minimum of two (2) weeks. No additional contract time will be granted for this delay. Should the contract time expire within that two (2) week period, the Public Works Commission reserves the right to assess liquidated damages, as outlined in these Contract Documents.

The Contractor shall complete the required work and restore water service within the given time period for the outage. Should the Contractor fail to complete the work within the allotted time, the Public Works Commission shall assess a penalty of \$500 per 15-minute interval or any portion thereof until water service is restored. This penalty will be deducted from the Contractor's pay application or be billed directly to the Contractor. The penalty may be waived for circumstances beyond the Contractor's control, as determined by the Public Works Commission. The PWC Project Coordinator reserves the right to cancel or postpone the outage at any given time, for any given reason.

27. Site Restoration

Once construction is completed, the Contractor shall be responsible for restoring the site to as good as, or better than existing conditions. All exposed areas not otherwise improved with asphalt, concrete, etc. are to be replaced with sod to insure against erosion, in accordance with the Soil Erosion and Sedimentation Control requirements.

For those areas outside the project limits, the Contractor shall be responsible for installing asphalt, concrete, etc. on non turf areas and sod in all disturbed areas, unless otherwise noted on the plans, and for the full replacement of any driveways, sidewalks, pavements, etc. disturbed as part of their operations.

28. Weigh / Quantity Tickets

Weigh/quantity tickets shall be required for those Contract quantities that are not measured in place, including but not limited to select material and undercut excavation. Work of this nature requires the Project Engineer or Project Coordinator's approval prior to beginning or the Project Engineer reserves the right not to pay for unauthorized work.

All quantity tickets for items not measurable in place shall be submitted to the Project Coordinator. Each ticket shall indicate the date, Contractor, job location, name of project, quantity of material, truck number and signature of the Contractor. The Contractor shall furnish the tickets to the Project Coordinator by the end of the next working day. No tickets shall be accepted after that time unless otherwise authorized by Project Engineer.

When a material is to be paid for on a per ton basis (i.e, material for undercut excavation), the weighing devices shall be certified by the N.C. Department of Agriculture. All scales shall be operated by a public weigh master licensed in accordance with the North Carolina General Statutes. A certified weigh certificate shall be issued for each load and contain the following information:

1. Project
2. Date
3. Time issued
4. Type of material
5. Gross weight (tons)
6. Tare weight
7. Net weight of material
8. Quarry or plant location
9. Truck number
10. Contractor's name
11. Public Weigh Master's stamp or number
12. Public Weigh Master's signature or initials in ink

The Project Engineer and/or the Project Coordinator may direct the Contractor to re-weigh the contents of any truck load that is delivered to the project on approved platform scales at no additional cost to the Owner.

When material is to be paid for on per cubic yard basis (i.e, select backfill), the payment shall be based on 75% of the gross volume of the truck(s) hauling the material. The truck ticket shall include the gross volume of the truck.

29. Claims for Extra Cost

Should the Contractor consider that as a result of any instructions given in writing by the Owner, he is entitled to extra costs above that stated in the Contract; the Contractor shall give written notice to the Owner. The written notice shall be sent to the Owner within seven (7) calendar days after the occurrence of the event and the Contractor shall not proceed with the work affected until further advised, except in an emergency involving the safety of life or property. No claims for extra compensation will be considered unless the claim is made. Extra Work performed by the Contractor, not approved by the Owner in writing shall not be considered for payment.

The Contractor shall not act on instructions received by him from person's other than the Owner and/or the Project Coordinator. Any claims for extra compensation or extension of time on account of unauthorized instruction will not be honored. The Owner will not be responsible for misunderstandings claimed by the Contractor of verbal instructions which have not been confirmed in writing, and in no such case shall instructions be interpreted as permitting a departure from the Contract Documents unless such instruction is confirmed in writing by the Owner.

30. Extension of Contract Time

If the Contractor is delayed during the progress of the Work by any causes beyond the Contractor's control; and/or by any other causes which the Owner determines may justify the delay, then the contract time may be extended by Change Order for the time which the Owner may determine to be reasonable. All extensions to the contract time shall be granted in full calendar days. If, at the end of the Contract, the final completion date falls on a non-work day, the Owner, may, at their sole discretion, grant additional calendar days so that the final completion date is a work day.

Request for time extensions shall be made in writing within 30 calendar days following the cause of delay. In cases of continuing cause of delay, only one (1) claim is necessary. Failure to make written requests within the allowed time frame shall waive the Contractor's ability to make future claims for that specific instance which expired. Requests for time extensions for weather delays do not entitle the Contractor to "extend overhead".

- Change in Work delays – Change in work delays are defined as delays due to changes in the Work that alters the original scope of the Contract and impacts the critical path (i.e., delays the controlling operation). Additional calendar days may be granted by the Owner for work assigned to the Contractor through a change order; provided that the Contractor's critical path is impacted by the change in work. The additional time shall be based on the actual number of calendar days that the critical path (i.e., controlling operation) is delayed, as determined by the Owner. The Owner may extend the contract time based on the estimated number of calendar days to complete additional work that does not adversely impact the critical path.
- Weather delays – Weather delays are defined as any event that affects the standard daily production for 50% or more of the Contractor's scheduled workday. Weather delays shall be based on the actual precipitation received (i.e., inches of rain), the time the precipitation occurred, and the Project Coordinator's observation. Weather days shall not be granted for weather that occurs during non-work hours, including weekends and/or holidays; unless it affects the Contractor's standard daily production for 50% or more of the following scheduled work day. Weather days shall be determined at the Owner's sole discretion. Throughout the Contract, the Contractor shall record the occurrence of weather and the resultant impact to the scheduled work.

Monthly Anticipated Adverse Weather Days

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5 days	5 days	5days	5 days	6 days	7 days	8 days	8 days	5days	4 days	4 days	5 days

Note the initial contract duration includes these days

Weather days shall be based on the actual precipitation received (i.e., inches of rain), the time the precipitation occurred, and the Project Coordinator's observations. Weather days shall not be granted for weather that occurs during non-working hours, including weekends and/or holidays, unless it affects the Contractor's standard daily production for 50% or more of the following working day. Weather days shall be determined at the Project Engineer's sole discretion.

Throughout the Contract, the Contractor shall record the occurrence of weather and the resultant impact to the scheduled work.

If the number of actual weather days exceeds the number of days anticipated in the paragraph above, the Project Engineer will issue a modification of contract time in full calendar days.

31. Change Orders

The Public Works Commission may have changes made in the work covered by the Contract. These changes will not invalidate and will not relieve or release the Contractor from any guarantee given by him pertinent to the Contract provisions. These changes will not affect the validity of the Payment Bond and Performance Bond nor will it relieve the Surety or Sureties of said Bond. All extra work shall be executed under the conditions of the original contract, unless otherwise specified in the approved Change Order.

Except in an emergency endangering life or property, no changes shall be made to the Contract except upon written notice from the Owner authorizing such change, and no claim for adjustments of the contract price shall be valid unless this procedure is followed.

Adjustment in Contract Price and/or Contract Time stated in a change order shall comprise the total price and/or time adjustment due to or owed to the Contractor for the Work or changes defined in the Change Order. By executing the Change Order, the Contractor acknowledges and agrees to the Change Order, incorporating all cost and delays associated with the interruption of schedules, extended overheads, delay, and cumulative impacts or ripple effect, on all work under this Contract. Signing of the Change Order constitutes full and mutual accord and satisfaction for the adjustment in the contract price and/or time as a result of increases or decreases in costs and time of performance caused directly and indirectly by the change. Execution of the Change Order represents an equitable adjustment to the contract price and/or time and that the Contractor waives all rights to claim further adjustments related to the Change Order.

If during the progress of the Work, the Owner requests a change order and the Contractor's terms are unacceptable, the Owner without prejudice may perform or have performed that portion of the work requested by others or with the Public Works Commission's own forces.

At the time of signing a change order, the Contractor shall be required to certify as follows:

"I certify that my Bonding Company will be notified forth-with that my contract has been changed by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my Surety." - *Statement to be listed on change order document.*

32. Final Inspection/Acceptance of Work

When the Project Coordinator deems the project completed and ready for final inspection, the Project Coordinator shall notify the Owner. During the final inspection any items documented shall be compiled in a final punch list and provided to the Contractor within five (5) business days. The Contractor shall be required to complete each item in the final inspection punch list within 30 calendar days of receipt. Failure to complete the punch list in that time may result in liquidated damages being assessed. The project will not be considered complete until all punch list items are completed and accepted, unless

otherwise determined by the Owner. All punch list items shall be completed prior to release of final payment. Once the deficiencies have been addressed to the Public Works Commission's satisfaction, a final acceptance letter will be issued to the Contractor.

Prior to the final inspection, the Contractor shall complete the following:

- Verify all valves are open.
- Verify all valves are accessible and can be opened or closed, as appropriate for the proper operation of the facilities
- Install marking posts (provided by PWC) at all valves.
- Manholes located outside of pavement must have a PWC issued marker installed for later detection.
- All manholes having camlock ring and covers shall be locked.
- Install a PWC issued marker at all valve and air release valves at manholes outside of pavement as directed by Project Coordinator.
- Complete all restoration.
- Complete all required testing.

No separate payment shall be made for this work.

33. Record Drawings

Record documents shall be provided and in accordance with Section 01300 of the Contract Documents.

34. E-Verify Requirements

Contractor/Vendor hereby acknowledges that "E-Verify" is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. Contractor/Vendor further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must use E-Verify and after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS §64-26(a). Contractor/Vendor hereby pledges, attests and warrants through execution of this Agreement that Contractor/Vendor complies with the requirements of Article 2, Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that any subcontractors currently employed by or subsequently hired by Contractor/Vendor shall comply with any and all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Agreement.

**** END OF SECTION ****

**DIVISION I
GENERAL REQUIREMENTS**

01025 MEASUREMENT AND PAYMENT

GENERAL

- A. The purpose of this Section is to define the methods of measurement and payment for each of the unit prices and/or lump sum prices listed in the Bid Form, which are required to construct the Work.
- B. The unit price and/or lump sum price bid shall be full compensation for the work required under each bid item, which shall include all incidental costs relative thereto. Certain items of work are specified and/or shown as a detail in the Contract Documents and drawings; bid prices shall include all items of work required to furnish and/or install each in accordance with the Project requirements, whether specifically stated or itemized in the Measure and Payment description.
- C. Certain items of work listed hereinafter may not be required on this project, and shall be denoted as not applicable.
- D. Certain bid items have been designated to conform to maximum payment widths and/or lengths and no additional payment therefore will be allowed unless otherwise approved by the Owner. These designated items will be as identified in the Bid Form, Technical Specifications and as may be indicated on the Contract Drawings. The designation of these items of work shall be noted as "No Overage Allowed" or "NOA". Prospective bidders shall be responsible for verifying that the actual quantities of work are listed in the Bid Form prior to submitting bids, and include all costs (regardless whether the Bid quantities are over or under the quantities indicated on the plans) in the unit price bid.

THE FOLLOWING PAYMENT ITEMS ARE APPLICABLE IN ALL PARTS A, B, C, D & E

G-1 MOBILIZATION AND DEMOBILIZATION

- A. The lump sum prices shown under each PART of the Bid Form are based on a percentage of the Design Engineer's estimate of probable cost. Payment under this item shall include all costs of mobilization, demobilization, bonds and insurance and other related costs.
- B. Fifty percent (50%) of the mobilization items will be paid under the first payment application submitted and the balance under the second payment application submitted.

G-2 TRAFFIC CONTROL & TRAFFIC PLAN

- A. The lump sum prices bid under each PART in the Bid Form shall include all costs for the preparation and implementation of required traffic management plans, furnishing, installing and maintaining traffic control signage and devices, relocating or removing signs or other traffic control devices, replacement of street signs, replacement of traffic signal loops, and all other incidental work throughout the project site, throughout the project duration. The Contractor shall coordinate his activities so as to minimize disruption of traffic and inconvenience to residents and

the general public. All such traffic control devices, signage, traffic patterns and road closures shall be approved by the City of Fayetteville and/or NCDOT.

B. Payment under the lump sum prices bid for each part shall be made on a monthly basis based on actual estimated percentage of work completed and maintained as determined by the Project Coordinator or Project Engineer. In no case shall the monthly payment exceed ten (10) percent of the lump sum prices bid without approval by the Project Engineer..

C. Prospective bidders are advised that failure to provide and maintain adequate traffic control devices and/or signage may result in the Project Engineer's refusal to make payment until corrective measures are in place.

D. Improper signage and/or traffic control devices will not be allowed. The City of Fayetteville, NCDOT, and/or the Public Works Commission reserves the right relocate and/or remove such non-conforming signs and devices, setup proper signage to ensure public safety and deduct all costs for these items which may be incurred by the Owner. The Contractor shall make no claim for such work performed.

G-3 EROSION AND SEDIMENTATION CONTROL

A. The lump sum prices bid under the applicable PARTs in the Bid Form bid for erosion and sedimentation control shall include all costs for furnishing, erecting, maintaining and removing silt fence, temporary sedimentation control devices, rip-rap, rock check dams, temporary seeding, gravel construction entrances, filter fabric, integral straw, curled wood matting, inlet protection and any other erosion control devices shown or as may be required by the appropriate regulatory agencies throughout the project site, throughout the project duration. No additional payment will be made for removal of soil and debris from drainage structures, features, or reconditioning grading that is part of the normal maintenance activities associated with the approved erosion control plan. No additional payment shall be made for any other work due to inadequate or improperly maintained measures.

B. Prospective bidders are advised, that erosion and sedimentation control will be strictly enforced, and any failure to conform to required standards is considered a right precedent to the Owner to deny payment. Additional measures required by the North Carolina Department of Environmental and Natural Resources (NCDENR) shall not be cause for change in the lump sum price bid. Bidders shall make themselves aware of all NCDENR regulations and requirements. The Contractor shall be responsible for all fines levied due to improper erosion and sediment control measures to include all costs incurred by City of Fayetteville and/or Public Works Commission necessary to bring a non-conforming site into compliance.

C. The lump sum price bid shall include all costs necessary for the Contractor to comply with the requirements of the NPDES permit that is associated with the approved erosion control permit. Such activities include, but are not limited to: installation and maintenance of rain gauges, completing the required inspection reports, posting the permit and reports on the project, and furnishing copies of the inspections reports to the Owner.

D. Payment under the lump sum prices bid for each PART shall be made on a monthly basis as indicated in the Contractor's schedule for the substantial completion of all work under this Contract. In no case, shall the monthly payment exceed ten (10) percent of the lump sum prices bid without the approval of the Owner.

G-4 BORROW EXCAVATION (SELECT BACKFILL)

A. Borrow excavation (select backfill) will be paid for at the unit price bid per cubic yard, as contained in the Bid Form, which payment shall constitute full compensation for all material, equipment, labor and all else required for acquisition, placement and compaction of select backfill material from borrow. Borrow excavation material shall be supplied by the Contractor from approved borrow areas located off-site. Materials utilized "on-site" within the Project limits or as defined, as the "free haul limit" will not be considered for payment as borrow excavation.

B. The cubic yards of select backfill to be paid for shall be 75% of the volume indicated on the submitted truck tickets. Disposal of unsuitable and/or suitable excavated material will not be paid for as a separate bid item. The Owner reserves the right to verify the actual amount of material in place.

C. Payment under this item shall include all costs necessary to furnish and install select material necessary to provide proper suitable backfill material compacted and in place as measured. Work shall include all costs to acquire, place, and compact select backfill material, removal and proper disposal of unusable material, and all labor, materials, equipment, and incidentals necessary to complete the work. The PWC Project Coordinator shall approve the use of select material within the limits of this project.

G-5 CLEARING AND GRUBBING, PERMANENT EASEMENTS & RIGHTS OF WAY

A. The unit price bid per acre shall include the costs for felling trees, stump removal and disposal off-site, cutting trees in pulpwood length and stacking on or off easement areas if required, disposing of all trimmings, removing and disposing off-site all logs, branches, trunks, root mats, brush, vegetation, debris from clearing and grubbing operations and all other incidental materials not to be re-used in the work. Areas containing and requiring cutting and removal of weeds, grass, grain annual or perennial plants, or saplings less than one inch in diameter shall not be measured and paid for as clearing and grubbing. Payment shall be based on the horizontal area cleared and grubbed as designated on the plans or as directed by the Owner. Measurement will be made to the nearest one tenth of an acre.

G-6 CLEARING AND GRUBBING, TEMPORARY EASEMENTS

A. The unit price bid per acre shall include the costs for felling trees, stump removal and disposal off-site, cutting trees in pulpwood length and stacking on or off easement areas if required, disposing of all trimmings, removing and disposing off-site all logs, branches, trunks, root mats, brush, vegetation, debris from clearing and grubbing operations and all other incidental materials not to be re-used in the work. Areas containing and requiring cutting and removal of weeds, grass, grain annual or perennial plants, or saplings less than one inch in diameter shall not be measured and paid for as clearing and grubbing. Payment shall be based on the horizontal area cleared and grubbed as designated on the plans or as directed by the Owner. Measurement will be made to the nearest one tenth of an acre.

B. The unit price bid per acre shall also include all work as noted for permanent easements and shall also include protection of all trees, floral bushes or plants not to be removed or disturbed.

G-7 SOD (NO OVERAGE ALLOWED)

A. Payment for placing sod as indicated on the drawings or as directed by the Project Coordinator or Project Engineer shall be made at the unit price bid per square yard listed in the

Bid Form. Payment shall include grading, fine raking, sod bed preparation, pest and disease control, soil amendments, placing sod, anchoring, fertilizing, maintaining, protection of turf areas, removal and replacement of dying sod and watering to ensure growth. No payment will be made for sodding areas outside of easements or rights-of-way disturbed or otherwise damaged by the Contractor. The Proposal quantity reflects the total quantity of sod the Owner will pay for. In general, the maximum pay widths are shown below.

B. In some cases, specific quantities of sod in individual areas are identified on the Drawings and no overage will be allowed or paid for in these specific locations.

C. Stripping of topsoil will not be measured and paid for as a separate bid item. All work shall be included for payment under the applicable items listed in the Bid Form. Work shall include stripping, stockpiling, spreading, leveling, supplemental topsoil, filling, grading and compaction of suitable topsoil along right-of-way and easements.

Maximum Pay Widths for Sod

Permanent Easements	20' (or as indicated on the plans)
Temporary Easements	10' (or as indicated on the plans)

G-8 SEEDING (NO OVERAGE ALLOWED)

A. Seeding of wetlands areas, easements and along right-of-way will be paid for at the unit price bid listed in the Bid Form and shall include all costs for soil preparation, pest control, disease control, anchoring, placing soil amendments, topsoil, grading, raking, seeding, fertilizing, mulching, crimping, watering, protection of turf areas, maintenance, reseeding if required, tack, and other work incidental thereto. Area to be paid for shall be measured horizontally and payment for this work will be made to the nearest one tenth (1/10) of an acre. No payment will be made for areas outside of permanent and temporary easements and along rights-of-way disturbed by the Contractor's operations.

B. Stripping of topsoil will not be measured and paid for as a separate bid item. All work shall be included for payment under the applicable items listed in the Bid Form. Work shall include stripping, stockpiling, spreading, leveling, supplemental topsoil, filling, grading and compaction of suitable topsoil along right-of-way and easements.

G-9 FRENCH DRAINS

A. Payment for constructing french drains shall be made at the unit price bid per linear foot as listed in the Bid Form and shown on the detail. Payment shall include all labor, equipment and materials including but not limited to excavation, backfilling, compaction, filter fabric, slotted pipe, socks, graded stone, and all else necessary to complete the work. The location and length of french drains shall be as shown on the plans or as determined in the field by the Project Coordinator.

PART "A", STREET CONSTRUCTION

A-1 PERMANENT PAVEMENT PATCH (NO OVERAGE ALLOWED)

Payment for removing pavement in parking lots, roads, milling and replacing with two (2) inches of Asphalt Pavement Surface Course and eight (8) inches Aggregate Base Course, shall be made at the unit price bid per square yard completed, accepted as listed in the Bid Form. Installation of the permanent patch shall be completed in accordance with PWC requirements. Maximum payment widths for trenches have been established for all sanitary sewer mains, force mains, sewer laterals, water mains, water laterals and storm drainage, regardless of the depth of excavation or type of existing pavement. Payment widths shown include a minimum cutback of six (6) inches each side of the trench prior to placing pavement trench patch. Any pavement removed or damaged beyond the limits specified herein, shall be replaced by the Contractor at his own cost unless directed otherwise by the Project Engineer. No payment for overage beyond the quantity shown in the Bid Form will be made.

Maximum Pay Widths for Permanent Trench Patch

Sanitary Sewer	10'	(0' to 10' depth, measured to invert of pipe)
Sanitary Sewer	12'	(greater than 10' depth, measured to invert of pipe)
Force Main	4'	

Payment for furnishing and placing permanent asphalt pavement patch shall include the costs of all labor, materials, tools, and equipment necessary to complete the work which shall include re-cutting (NO WHEEL CUTTING ALLOWED) pavement to straight uniform widths parallel and perpendicular to the road with no jagged edges, removal and disposal of asphalt offsite, re-compaction, removing and disposing of excess soil base course, re-compaction of pavement sub-grade, placement and compaction of ten (10) inches of ABC, maintaining ABC as necessary to maintain stone at pavement grade until removal of upper two (2) inches of stone for paving, adjusting castings as required, tack coat, placing and compacting of asphalt material, cleanup and all other incidental work as shown on the details.

Contractor shall be required to remove asphalt, re-compact base and sub-base, dispose of unsuitable material off-site and re-patch any areas of settlement at no expense to the Owner. When excavating prior to paving, transitions shall be made to accommodate road travel at no additional cost to the Owner.

A-2 INCIDENTAL STONE

Payment for incidental stone authorized by the Project Engineer or Project Coordinator to be placed for the maintenance of driveways and street intersections shall be made at the unit price bid per ton and shall include all costs for labor, tools, materials, equipment, furnishing, placing, supplementing stone required for maintenance, grading/leveling stone, wetting, blading, compaction, removing and disposal of incidental stone immediately prior to asphalt pavement patch in each area. The Contractor shall furnish a "certified scale ticket" with each load of stone to the Project Coordinator by 5:00 pm the following business day in order to be considered for payment. Incidental stone that is stockpiled or not placed will not be considered for payment.

Contractor shall remove a minimum two (2) inches of soil or aggregate base course, place, and compact stone in order to be considered for payment.

No separate payment shall be made for incidental stone placed in mainline or service lateral trenches unless authorized by the Project Coordinator or Project Engineer.

A-3 MAINTENANCE STONE (NO OVERAGE ALLOWED)

Payment for maintenance stone authorized by the Project Engineer or Project Coordinator shall be made at the unit price bid per square yard in place and shall include all costs for labor, tools, materials, equipment, furnishing, placing, supplementing stone required for maintenance, compaction, removal and disposal of maintenance stone in each area.

In order to be considered for payment, maintenance stone shall be at a minimum depth of four (4) inches and a minimum length of fifty (50) feet. Payment shall be made based upon actual width in place not to exceed 4 (four) feet.

No separate payment shall be made for maintenance stone placed in mainline or service lateral trenches unless authorized by the Project Coordinator or Project Engineer.

A-4 REMOVE & REPLACE GRAVEL DRIVEWAYS (NO OVERAGE ALLOWED)

Existing gravel and/or soil driveway shall be replaced with six (6) inch thick compacted Aggregate Base Course (ABC) or stone matching existing drive. Compaction shall be equal to or greater than original and shall support traffic loading. Payment shall be per square yard as indicated on the Bid Form.

PART "B" STORM DRAIN IMPROVEMENTS

B-1 REMOVE AND REPLACE EXISTING DRAINAGE STRUCTURE

A. Payment for removal and replacing existing storm drainage structure will be made by actual count per each, complete, in place with a measured depth in vertical feet from the lowest invert elevations to the finish grade or original ground surface.

B. Payment shall include the cost for excavation, stone bedding, shoring, dewatering, removal and disposal of excess unsuitable material off site, grading, backfill, compaction, furnishing, installing or constructing new drainage structure, grade adjustments, cleanup and all other work required for complete installation.

B-2 RIP-RAP DRAINAGE FEATURE VICINITY STA 64 + 00 (NO OVERAGE ALLOWED)

A. Payment for furnishing and installing rip-rap will be measured and paid for at the unit price bid per square yard as listed on the Bid Form. The quantity shown on the plans shall not be exceeded and payment will not be made for overages.

B. Payment shall be full compensation for furnishing, hauling, placing all materials including filter fabric, graded stone rip-rap, fine grading and all equipment, tools, labor and incidentals necessary to complete the work.

B-3 UNDERCUT EXCAVATION

A. Undercut excavation shall be measured and paid for by the volume in cubic yards completed and accepted of unsuitable material excavated below the pipe as authorized by the Project Coordinator. Payment shall be based on the width of two (2) feet plus the internal diameter of the pipe and to the authorized additional depth required for proper support of the pipeline. Payment for structures shall be based on the width of two (2) feet plus the external diameter/dimension to the authorized depth required for proper support of the structure.

B. Payment shall include the costs for all labor, tools, materials and equipment including but not limited to the removal and disposal of unsuitable soil, stone bedding material and all other incidentals necessary to complete the work. No payment for undercut will be made for over excavation by error or where proper dewatering methods are not in place for trench and or excavation stabilization.

PART "D", SANITARY SEWER UTILITIES

D-1 PVC SANITARY SEWER MAINS

A. Installation of the PVC sewer main shall be accomplished in accordance with PWC Standard Specifications 02730 Sanitary Sewer Systems. Payment per linear foot of sanitary sewer shall be made at the applicable unit prices for each size and pay depth as indicated on the Bid Form. Payment under this item shall include all costs necessary to install the specified sewer main in accordance with PWC standards. Work shall include all costs for excavation, backfill, compaction, dewatering, cutting and removal of pavement, proper disposal of waste materials, installation of the pipe at the specified line and grade, stone bedding, and all labor, materials, equipment, and incidentals necessary to complete the work. The Contractor shall be responsible for completing the installation, proper alignment and grade of the installed main, and all other items related to proper installation. All pipe segments installed must have passed the detailed compaction requirements in order to be considered for payment.

D-2 DUCTILE IRON SEWER MAIN

A. Installation of the ductile iron sewer main shall be accomplished in accordance with PWC Standard Specifications 02730 Sanitary Sewer Systems. Payment per linear foot of sanitary sewer shall be made at the applicable unit prices for each size and pay depth as indicated on the Bid Form. Payment under this item shall include all costs necessary to install the specified sewer main in accordance with PWC standards. Work shall include all costs for excavation, backfill, compaction, dewatering, cutting and removal of pavement, proper disposal of waste materials, installation of the pipe at the specified line and grade, stone bedding, linings, coatings and all labor, materials, equipment, and incidentals necessary to complete the work. The Contractor shall be responsible for completing the installation, proper alignment and grade of the installed main, and all other items related to proper installation. All pipe segments installed must have passed the detailed compaction requirements in order to be considered for payment.

D-3 FURNISH AND INSTALL MANHOLE

A. Payment under this item shall include all costs necessary to furnish and install various diameter manholes as specified on the plans. Payment per each manhole shall be made at the applicable unit prices for each size and pay depth as indicated on the Bid Form. Work shall include all costs for excavation, backfill, removal and disposal of unsuitable material off-site, linings, inverts, pipe slides, dewatering, compaction, cutting and removal of pavement, proper disposal of waste, stone bedding, installation of the manhole in accordance with PWC standards, installation of the specified frame and cover, concrete collar, and all labor, materials, equipment, and incidentals necessary to complete the work.

D-4 FURNISH AND INSTALL DOGHOUSE MANHOLE

A. Payment under this item shall include all costs necessary to furnish and install various diameter doghouse manholes as specified on the plans. Payment per each doghouse manhole shall be made at the applicable unit prices for each size and pay depth as indicated on the Bid Form. Work shall include all costs for excavation, backfill, compaction, cutting and removal of pavement, proper disposal of waste, linings, inverts, pipe slides, installation of the doghouse manhole in accordance with PWC standards, installation of the specified frame and cover, stone bedding, removal and disposal of unsuitable material off-site, dewatering, removal of the existing pipe, concrete collar, and all labor, materials, equipment, and incidentals necessary to complete the work. Vacuum testing of the doghouse manhole is not required.

D-5 FURNISH AND INSTALL INSIDE DROP STRUCTURE

A. Payment shall be measured by actual count, complete, in place and accepted at the unit price bid as listed on the Bid Form. Payment shall include all costs necessary to install the specified inside drop connection in accordance with PWC standards. Work shall include installation of the inside drop structure in accordance with PWC standard detail S.5. Work shall include all costs for pipe, fittings, stainless steel straps, anchors, and all labor, materials, equipment, and incidentals necessary to complete the work.

D-6 PVC SEWER LATERAL INSTALLATION

A. Installation of PVC sewer laterals shall be measured by actual count, complete, in place, and payment will be made at the applicable unit price bid as listed in the Bid Form. Payment under this item shall include all costs necessary to furnish and install a PVC sanitary sewer lateral in accordance with PWC standards. Work shall include all costs for excavation, backfill, compaction, cutting of pavement, removal and disposal of excess unsuitable material off-site, proper disposal of waste, dewatering, marking the location of the lateral on the curb or edge of pavement, installation of a cleanout, all necessary fittings, stone bedding, installation of the lateral at the specified line and grade, and all labor, materials, equipment, and incidentals necessary to complete the work. All laterals installed must have passed the detailed compaction requirements in order to be considered for payment.

D-7 DUCTILE IRON SEWER LATERAL INSTALLATION

A. Installation of ductile iron sewer laterals shall be measured by actual count, complete, in place, and payment will be made at the applicable unit price bid as listed in the Bid Form. Payment under this item shall include all costs necessary to furnish and install a ductile iron sanitary sewer lateral in accordance with PWC standards. Work shall include all costs for excavation, backfill, compaction, cutting of pavement, removal and disposal of excess unsuitable material off-site, proper disposal of waste, dewatering, marking the location of the lateral on the curb or edge of pavement, installation of a cleanout, coatings, linings, all necessary fittings, stone bedding, installation of the lateral at the specified line and grade, and all labor, materials, equipment, and incidentals necessary to complete the work. All laterals installed must have passed the detailed compaction requirements in order to be considered for payment.

D-8 RECONNECT SEWER LATERAL TO NEW 12" RJDIP

A. Re-connecting a sewer lateral to new 12" RJDIP shall be measured by actual count, complete, in place, and payment will be made at the applicable unit price bid as listed in the Bid Form. Payment under this item shall include all costs to connect from the customer's sewer service as indicated on the plans to new 12" RJDIP. Work shall be in accordance with the Plumbing code and City of Fayetteville requirements. Work shall include all costs to install cleanouts, tapping saddle, permits, coordination with the property owner, excavation, dewatering, backfill, compaction, connection to the existing lateral, and all labor, tools, materials, equipment and incidentals necessary to complete the work and make operable.

D-9 CONNECTIONS TO EXISTING STRUCTURES

A. Connections to existing manholes will be paid for at the unit price bid per each as listed in the Bid Form completed and accepted and shall include all costs of equipment, labor, tools, materials and all incidental work. Connections shall consist of coring the manhole, installing flexible boots, re-building inverts, and sealing penetrations as required.

D-10 ANTI-SEEP COLLARS

A. Payment for installing anti-seep collars shall be made at the unit price bid per each as listed on the Bid Form. Collars shall be constructed at the locations indicated on the Contract Drawings and as shown in the PWC Standard Details.

D-11 UNDERCUT EXCAVATION

A. Undercut excavation shall be measured and paid for by the volume in cubic yards of unsuitable material excavated below the bedding limit line of four (4) inches below the pipe as authorized by the Project Coordinator. Payment shall be based on the width of two (2) feet plus the internal diameter of the pipe and to the authorized additional depth required for proper support of the pipeline. Payment for structures shall be based on the width of two (2) feet plus the external diameter to the authorized depth required for proper support of the structure.

B. Payment shall include the costs for all labor, tools, materials and equipment including but not limited to the removal and disposal of unsuitable soil, furnishing and placing stone bedding material and all other incidentals necessary to complete the work. No payment for undercut will be made for over excavation by error or where proper dewatering methods are not in place for trench and or excavation stabilization.

D-12 TESTING

A. Payment under this item shall include all costs necessary to perform the required testing on the sewer mains, low pressure sewer systems, force mains, laterals, and manholes. Work shall include all costs for furnishing test equipment, blow offs coordination with the PWC Project Coordinator, and all labor, materials, equipment, and incidentals necessary to complete the testing in accordance with PWC standards. Payment under this line item shall not be made until all performed tests are successful. No extra payment will be made for laterals connecting directly to manholes.

B. The Contractor shall be responsible for furnishing all necessary equipment to complete the testing, coordination with the Project Coordinator, and removal of all unnecessary taps and fittings upon completion of the work. Payment under this line item will not be made until all required tests are successful.

D-13 SUBMERSIBLE LIFT STATION

A. Payment for the submersible lift station as described herein shall be made at the lump sum unit price contained in the Bid Form. Payment shall include all necessary piping, fittings, wet well installation (including excavation, backfill, stone bedding, compaction), all necessary work to grade, clear, and prepare the site in accordance with the detailed site plan, fencing and gates, construction of the access road, pumps, bypass assembly, electrical work, control panels, site lighting, coordination as required for the installation and delivery of pumps, materials, electrical and mechanical equipment, coordination as necessary with the electrical service provider to provide the required electrical service to the lift station site, hoist assembly and wiring, valve vault, installation of piping and equipment, labor, materials, equipment, and all other necessary work required to furnish a complete installation as specified herein and shown on the Contract Drawings.

D-14 REMOTE TELEMETRY SYSTEM

A. Payment for furnishing and installing the remote telemetry (SCADA) system for the specified lift station shall be made at the lump sum price contained in the Bid Form. Payment shall include all necessary electrical work, necessary coordination with the PWC Lift Station Department, programming, testing, installation of the antennae, concrete foundation for the antennae, and necessary control panel, and all other labor, materials, and equipment as specified within these Contract Documents and as required by PWC to provide a working remote telemetry system capable of interacting with the existing PWC lift station remote telemetry system.

D-15 LIFT STATION STANDBY POWER

A. Payment for furnishing and installing the emergency generator for the specified lift station shall be made at the lump sum unit price contained in the Bid Form. Payment shall include the emergency generator as specified within these Contract Documents, all necessary electrical, mechanical, and site work, installation of conduit, concrete foundation, necessary coordination with the remote telemetry installer, and all other labor, materials, and equipment necessary to furnish a working standby power system as specified within these Contract Documents.

D-16 ABANDON & GROUT FILL EXISTING SEWER

A. Payment under this item shall include all necessary costs to grout fill the existing sewer mains to be abandoned. Work shall include all costs to plug the sewer mains at the manholes, hoses, pumps, fittings, grout, and all labor, materials, equipment, and incidentals necessary to complete the work. Grouting of the sewer mains shall occur after PWC has accepted the new sewer main and laterals.

D-17 ABANDON EXISTING MANHOLE

A. Abandonment of existing manholes shall be measured by actual count, complete, in place, and payment will be made at the applicable unit price bid as listed in the Bid Form. Payment under this item shall include all necessary costs to abandon existing manholes as indicated on the plans. Work shall include all costs to remove the manhole cone, excavation, backfill of the manhole with select material or flowable fill, dewatering, removal and disposal of unsuitable material off site, proper disposal of the abandoned manhole, compaction, and all labor, materials, equipment, and incidentals necessary to complete the work. Abandonment of the existing manholes shall be completed after the sewer mains have been grout filled.

D-18 BORE AND JACK SEWER MAIN

A. Payment under this item shall include all necessary costs to install the casing and carrier pipe in accordance with the project requirements. Work shall include all costs for excavation, shoring, removal and disposal of excess unsuitable material off site, bedding material, horizontal and vertical controls, bore steering mechanisms, steel casing, casing spacers, concrete grouting and closures, installation of the restrained joint ductile iron carrier pipe, backfill, compaction, and all labor, materials, equipment, and incidentals necessary to complete the work. The Contractor shall comply with all requirements for construction within the right-of-ways of the applicable permitting authority.

D-19 FURNISH AND INSTALL CAM-LOCK RING & COVER

A. Payment under this item shall include all costs necessary to furnish and install cam-lock ring and cover on an existing manhole. Measurement shall be based on the actual number installed. Payment shall be made at the contract unit price per each. The unit price shall include removal and disposal of the existing ring and cover, any existing grade rings or masonry adjustment, any necessary excavation to remove and/or install the ring and cover or any manhole sections, preparation of the concrete surface as required, installation of the ring and cover shall be in accordance with PWC standard details, clean-up and proper disposal of all debris and excess material and all labor, materials, tools, and equipment necessary to complete the work.

D-20 CONCRETE SIDEWALK

Concrete sidewalks shall be paid for at the unit price bid per square yard. Measurement of the sidewalks shall be measured horizontally as designated on the plans or as directed by the Engineer. Measurement shall be made to the nearest one square yard total. Payment shall be full compensation for furnishing, hauling, fine grading the subgrade, compaction, expansion joint materials, curing and placing all materials, forms and all equipment, tools, labor, and incidentals necessary to complete the work.

D-21 GATE VALVES AND BOXES

Gate valves together with valve boxes will be measured by actual count, complete, in place and payment will be made at the applicable individual unit price bid, as listed in the Bid Form for various sizes listed. Payment will be full compensation for furnishing and installing valves, valve boxes, tracing wire, connection of tracer wire and all other incidentals necessary for complete installation.

D-22 FORCE MAINS

The quantities of Force Main to be paid for shall be the number of linear feet, complete, in place, including the distance through valves, bends, fittings, etc. measured by the horizontal length. The unit price bid shall include all ductile iron bends, fittings, valve vaults, restrained joints and marking/identification tape. Any special construction methods, pipe bedding testing, etc. required for submitting pipe material will not be considered for payment. Payment shall include all work of every description including excavation, backfilling, grading, testing, linings, fittings, bends, restraint joints and all other necessary for complete pipe installation.

D-23 OMITTED

D-24 VALVE BOX PROTECTOR RING

Concrete valve box protection will not be measured and paid for as a separate bid item. Payment will be made at the applicable unit prices as listed in the Bid Form for the applicable item of work to which concrete valve protection pertains. Payment will be full compensation for materials, forming, placing and installing concrete, installation, adjusting valve boxes to grade and all other work required for complete installation.

D-25 AIR RELIEF AND VACUUM VALVE

Air relief and vacuum valve assemblies shall be measured by the actual number installed and will be paid for at the unit price bid, as contained in the Bid Schedule which payment shall constitute full compensation for all labor, materials, equipment and all else required or the completed installation, to include valves, piping, fittings, vault and connection to the force main, all as detailed on the Drawings, and as specified.

D-26 REMOVE SANITARY SEWER

Sanitary sewer removal shall be measured and paid for at the unit price bid as contained in the bid schedule. The unit price shall include all labor, tools, materials, equipment, by-pass pumping, incidentals and all else necessary to remove gravity sanitary sewer where indicated and dispose off-site in permitted facility.

D-27 REMOVE SANITARY SEWER MANHOLE

Sanitary sewer manhole removal shall be measured and paid for at the unit price bid as contained in the bid schedule. The unit price shall include all labor, tools, materials, equipment, by-pass pumping, incidentals and all else necessary to remove gravity sanitary sewer manhole where indicated and dispose off-site in permitted facility.

D-28 PIPE BURSTING 8" SS TO 12" RJDIP SS

Pipe bursting 8" gravity sewer and installation of factory restrained joint ductile iron pipe by approved method shall be measured and paid for at the unit price bid as indicated in the bid schedule and shall include all labor, tools, materials, equipment, bypass pumping, disposal of excess material, dewatering, CCTV pre and post construction of mains, launching and exit pits, shoring, bursting of existing 8" pipe and simultaneous installation of 12" factory restrained joint ductile iron pipe on grade. Any defects, ground heave, utility damage, regrading areas to existing profile and cross section and repair of areas where 12" RJDIP has varied from a NCDENR acceptable grade as determined by the Fayetteville PWC shall be included in the unit price bid. Bypass of sewer mains and live service connections and/or pump and haul also be included in the unit price bid for an installation complete and accepted for use.

D-29 DEMOLITION TOWN LIFT STATION

Demolition of Town lift station shall be measure and paid for as indicated in the bid schedule and shall include all labor, tools, materials, equipment, incidentals, bypass pumping, flushing existing force main and protection of temporary connection to FPWC water system in accordance with Cross Connection Control Ordinance and FPWC Service Regulations, disposal of flushing water, plug and sever force main as indicated, offsite disposal of excess materials not salvaged and delivered to FPWC Warehouse Old Wilmington Road, termination and abandonment of utility services in accordance with applicable codes and ordinances, transfer of sanitary sewer flow from existing to new system, remove existing lift station structure and dispose offsite. Payment shall also include removal of pumps, motors, float systems, piping, valves, controls, electric meter, electrical components, antenna, scada system, RTU, wet well cover slab and appurtenances, cleaning and delivery to PWC Warehouse, Old Wilmington Road. Plug 8" sanitary sewer and will with grout as indicated and demolish upper 2' of wet well, fill wet well with suitable onsite soils, place topsoil, add amendments, seed and mulch.

D-30 CONVERT LEGION HILLS LIFT STATION TO MANHOLE

Conversion of Legion Hills Lift Station to manhole shall be measured and paid for as indicated in the bid schedule and shall include all labor, tools, materials, equipment, incidentals, bypass pumping, flushing and abandoning existing force main, protection of temporary connection to PWC water system in accordance with Cross Connection Control Ordinance and FPWC Service Regulations, disposal of flushing water, plug and sever force mains as indicated. Payment shall also include all costs associated with offsite disposal of removed items not salvageable, abandonment of existing water service, removal of mail boxes, abandonment of existing electric service and delivering electric meter to FPWC Warehouse, Old Wilmington Road. Payment shall also include conversion of lift station to manhole, removal and disposal of wet well contents and filling of wet well with concrete to elevation of invert in and out with trough, removal of telemetry system, antenna, RTU and components and deliver to PWC Warehouse. Payment shall include removal of odor control feeder pump, heater, 3000 gal chemical tank, electrical panel, sump pump, level indicators, alarms, suction lines, fill lines, handrails, W8x10 steel roof beams, and deliver to PWC Warehouse, Old Wilmington Road. Remove reinforced concrete wall and foundations/stairs to 24" below grade, fill void with suitable material and dispose offsite, remove exterior chemical feed tank and appurtenances and deliver to PWC Warehouse. Price to include spread topsoil on disturbed area, add amendments, seed and mulch and make system operable.

D-31 CONVERT PINEWOOD LIFT STATION TO MANHOLE

Conversion of existing Pinewood Lift Station to manhole shall be measured and paid for as indicated in the bid schedule and shall include all labor, tools, materials, incidentals, equipment, bypass pumping, flushing and abandoning existing force main protection of temporary connection to PWC Water System in accordance with Cross Connection Control Ordinance and PWC Policy, disposal of flushing water, plug 6" force main at edge of wet well. Payment shall also include removal and disposal of wet well contents, removing lift station pipe, pumps, equipment, level indicators, relocated hoist to new station, removal of electrical equipment and electric rack and delivery to PWC Warehouse. Adjust lift station manhole to new finish grade, fill wet well to invert in/out with concrete. Remove valve vault, pipe, fittings, valves, perform demolition and delivery of onsite generator to PWC Warehouse Old Wilmington Road.

**DIVISION 1
GENERAL REQUIREMENTS**

01300 SUBMITTALS

GENERAL

This section specifies the means of all submittals. All submittals shall be submitted to the Public Works Commission. A general summary of the types of submittals and the number of copies required is as follows:

<u>Copies to PWC</u>	<u>Type of Submittal</u>
5	Administrative Submittals
6	Construction schedule
5	Shop drawings
5	Product samples
1	Preconstruction Video
5	Certificates of compliance
5	Warranties

SUBMITTAL PROCEDURES

Transmit each submittal with a form acceptable to the Public Works Commission, clearly identifying the project, the Contractor, the enclosed material and other pertinent information specified in other parts of this section. The Contractor shall specifically identify variations from the Contract Documents and/or any Product or system limitations which may be detrimental to successful performance of the completed Work.

The Contractor shall revise and resubmit submittals as required, identify all changes made since previous submittals. Resubmittals shall be noted as such and shall direct attention to the revisions made. Resubmittals shall be handled in the same manner as the first submittal.

The Contractor shall distribute copies of reviewed submittals to concerned parties, with instructions to the party to promptly report any inability to comply with provisions.

ADMINISTRATIVE SUBMITTALS

All administrative submittals shall be prepared and submitted in accordance with the Submittal Checklist provided in these Contract Documents. All Preconstruction Administrative submittals must be submitted and approved prior to the release of Contractor's first Application for Payment. Construction Administrative Submittals must be submitted and approved prior to the release of monthly pay applications. Post Construction Administrative Submittals must be submitted and approved prior to the release of the Contractor's Final Application for Payment.

CONSTRUCTION SCHEDULE

The construction schedule shall be prepared and submitted in accordance with Specification Section 01310. Six (6) copies of the schedule shall be submitted to the Project Engineer within 10 calendar days after the date of the Notice to Proceed.

The construction schedule shall be revised to reflect comments by the Public Works Commission and updated monthly, depicting progress to the last day of the month. Six (6) copies shall be submitted to the Project Engineer no later than the Monday prior to each Monthly Progress Meeting.

Changes to the schedule shall be accompanied by a letter of explanation with appropriate reference and revision date on the schedule.

SHOP DRAWINGS

The Contractor shall submit to the Project Engineer for review shop drawings for concrete reinforcement, structural details, thrust collars, materials fabricated especially for this Contract, and/or materials for which such Drawings are specified or specifically requested by the Public Works Commission.

Shop drawings shall show the principal dimensions, weight, structural and operating features, wiring and control drawings, performance curves, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the Drawings.

When so specified, or if considered by the Public Works Commission to be acceptable, the manufacturer's specifications, catalog data, descriptive matter, illustrations, etc. may be submitted for review in place of shop drawings. In such case, the requirements shall be as specified for shop drawings, insofar as applicable.

The Contractor shall be responsible for the prompt submittal of all shop drawings so that there shall be no delay to the Work due to the absence of such Drawings. The Project Engineer will review and return the shop drawings within 30 calendar days of receipt of such Drawings. Two (2) sets of the reviewed shop drawings will be returned to the Contractor by regular mail.

Project delays caused by failure to submit or rejection of submittals shall not be cause for additional compensation or Contract time extensions.

All shop drawings shall be submitted to the Project Engineer prior to installation of material. The Contractor is responsible for obtaining shop drawings from his subcontractors and returning reviewed Drawings to them. All shop drawings shall be prepared on standard size, 24-inch by 36-inch sheets, or smaller. All Drawings shall be clearly marked with the name of the project, Public Works Commission, Contractor, and pay item to which the drawing applies. Drawings shall be suitably numbered and stamped by the Contractor. Each shipment of Drawings shall be accompanied by a letter of transmittal giving a list of the drawing numbers and the names mentioned above.

PRODUCT DATA

Where manufacturer's publications in the form of catalogs, brochures, illustrations, or other data sheets are submitted in lieu of prepared shop drawings, such submission shall specifically indicate the particular item offered. Identification of such items and relative pertinent information shall be made with indelible ink. Submissions showing only general information will not be accepted.

Product data shall include materials of construction, dimensions, performance characteristics and capacities, etc.

Pipe manufacturer shall submit documentation for all pipe being supplied to this project indicating date of manufacture, type and place of storage, shipping methods, dates of delivery to site, and all required testing data. Pipe internal surface shall be smooth and free of all cuts, gouges, or scratches. Surface cuts or scratches greater than or equal to the maximum defect depth are not acceptable.

SAMPLE WARRANTIES

When warranties are called for, a sample of the warranty shall be submitted with the shop drawings. The sample warranty shall be the same form that will be used for the actual warranty.

WORK PRIOR TO REVIEW

No material or equipment shall be purchased, fabricated or delivered to the project site until the required shop drawings have been submitted, processed and marked either "APPROVED" or "APPROVED AS NOTED". All materials and Work involved in the construction shall be as represented by said Drawings.

The Contractor shall not proceed with any portion of the Work for which the design and details are dependent upon the design and details of equipment for which submittal review has not been completed.

Only submittals which have been checked and corrected should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting shop drawings to the Project Engineer, the Contractor shall check thoroughly all such Drawings to verify that the subject matter conforms to the Contract Documents in all respects. Drawings which are correct shall be signed and dated by the Contractor's representative checking the submittal and shall include the following statement: "This shop drawing has been reviewed and approved with respect to means, methods, techniques, sequences and operations of construction, safety precautions and programs incidental thereto. The Contractor also warrants that this shop drawing complies with the Contract Documents and comprises no variation thereto." Once correct, they shall be submitted to the Project Engineer for Review. Drawings submitted without this statement shall be returned to the Contractor unreviewed.

The review of shop drawings will be general and shall not relieve the Contractor of the responsibility for details of design, dimensions, etc., necessary for proper fitting and construction of the Work required by the Contract Documents and for achieving the specified performance.

For submissions containing departures from the Contract Documents, the Contractor shall include proper explanation in his letter of transmittal. Should the Contractor submit for review equipment that requires modifications to the structures, piping, layout, etc. detailed on the Drawings, he shall also submit for review details of the proposed modifications. If such equipment and modifications are accepted, the Contractor, at no additional cost to the Public Works Commission, shall do all Work necessary to make such modifications.

SUBSTITUTIONS

Whenever a particular brand or make of material, equipment, or other item is specified, or is indicated in these Contract Documents, it is for the purpose of establishing a standard of quality, design, and type desired and to supplement the detailed specifications. Any other brand or make which, in the opinion of the Public Works Commission, is equivalent to that specified or indicated may be offered as a substitute subject to the following provisions:

- a. Contractor shall submit for each proposed substitution sufficient details, complete descriptive literature, and performance data together with samples of the materials, where feasible, to enable the Project Engineer to determine if the proposed substitution is equal.

- b. Contractor shall submit certified tests, where applicable, by an independent laboratory attesting that the proposed substitution is equal.
- c. A list of installations, to include the Owner's name and phone number, where the proposed substitution is equal.
- d. Where the acceptance of a substitution requires revision or redesign of any part of the Work, all such revision and redesign, and all new Drawings and details required therefore, shall be provided by the Contractor at his own cost and expense, and shall be subject to review of the Project Engineer.
- e. In all cases the Public Works Commission shall be the sole judge as to whether a proposed substitution is to be accepted. The Contractor shall abide by the Public Works Commission's decision when proposed substitute items are judged to be unacceptable and shall in such instances furnish the item, or substitute, as specified. No substitute items shall be used in the Work without written acceptance of the Public Works Commission. The Public Works Commission reserves the right to reject any proposed changes and/or substitutions at their sole discretion, and is under no obligation to justify the decision.
- f. Acceptance of any proposed substitution shall in no way release the Contractor from any of the provisions of the Contract Documents.

Each submittal shall be complete in all aspects incorporating all information and data required to evaluate the products' compliance with the Contract Documents. Partial or incomplete submissions shall be returned to the Contractor without review.

Shop Drawing Distribution: The Contractor shall submit a minimum of five (5) copies of all shop drawings to the Project Engineer for review. Shop drawings will be reviewed, stamped and distributed with the appropriate box checked either "APPROVED", "APPROVED AS NOTED", "NOT APPROVED" or "REVISE AND RESUBMIT". The Project Engineer shall return three (3) copies to the Contractor and retain two (2) copies.

If the Contractor requires additional copies of returned shop drawings, he shall include extra Drawings in his original submittal. The Project Engineer will process the Drawings and return them to the Contractor.

PRODUCT SAMPLES

Contractor shall furnish for review all product samples as required by the Contract Documents or requested by the Project Engineer to determine compliance with the specifications.

Samples shall be of sufficient size or quantity to clearly illustrate the quality, type, range of color, finish or texture and shall be properly labeled to show complete project identification, the nature of the material, trade name of manufacturer and location of the Work where the material represented by the sample will be used.

Samples shall be checked by the Contractor for conformance to the Contract Documents before being submitted to the Project Engineer and shall bear the Contractor's stamp certifying that they have been so checked. Transportation charges on samples submitted to the Public Works Commission shall be prepaid by the Contractor.

Project Engineer's review will be for compliance with the Contract Documents, and comments will be transmitted to the Contractor with reasonable promptness.

Acceptable samples will establish the standards by which the completed Work will be judged.

PRECONSTRUCTION VIDEO

The Contractor shall document pre-existing conditions on the project site in accordance with these Contract Documents. This shall be done prior to Work beginning in the area. **The video shall be submitted to the Project Engineer before the first payment application can be released.**

PROJECT SIGN SKETCH

Prior to first application for payment, Contractor shall erect the specified number of project signs consisting of 4 feet – 0 inch by 8 feet – 0 inch by 3/4 inch exterior grade plywood and hardwood edging on all four edges. The signs shall be mounted on two 4 inch by 4 inch wood posts. Posts shall be 6 feet – 0 inch on centers, and the center of the sign shall be located midway between posts. Top of sign shall be 6 feet – 0 inch above ground, and posts shall extend 2 feet – 0 inch below ground level (or deeper if required to ensure stability). The plywood shall be painted white, front and back. Hardwood edging and posts shall be painted black. All lettering shall be black and wording on the signs shall be as follows:

PUBLIC WORKS COMMISSION CITY OF FAYETTEVILLE	
LEGION HILLS OUTFALL AND NEW PINWOOD DRIVE LIFT STATION	
MOORMAN, KIZER & REITZEL, INC. 115 Broadfoot Avenue Fayetteville, NC 28305	NAME OF GENERAL CONTRACTOR GENERAL CONTRACTOR

The project sign(s) shall meet requirements of all local codes and ordinances. The Contractor shall submit a simple sketch to the Project Engineer for approval prior to ordering or erecting the sign. The submitted sketch shall show heights and spacing of lettering.

RECORD DRAWINGS

Upon completion of the Work, the Contractor shall provide two complete sets of drawings recording all changes to the work to indicate actual installation. Changes shall be noted in legible red letters. These changes shall include but are not limited to the following:

- 1) Change in lateral location
- 2) Change in pipe material
- 3) Change in manhole location
- 4) Size, depth, and installed elevations of mains, laterals, force mains, manholes and lift stations.
- 5) Location of valves, blow-offs, and other appurtenances
- 6) Location of ductile iron installed on existing AC watermains.

Completion of the Contractor’s record drawings is a specific contract requirement, and final payment will not be made until these drawings and project manual (as required) have been submitted to and approved by the Project Engineer.

CERTIFICATES OF COMPLIANCE

Copies of certificates of compliance and test reports shall be submitted for requested items to the Project Engineer prior to request for payment.

WARRANTIES

Original warranties, called for in the Contract Documents, shall be submitted to the Project Engineer. When warranties are required for an item, warranty shall be submitted prior to request for payment of that item.

When warranties are requested, a sample of the warranty to be provided shall be submitted with, and considered part of, the shop drawings.

The Contractor shall warrant to the Public Works Commission that all material and labor used in the construction are covered by his warrantee for a minimum of a one (1) year period (unless otherwise noted in these Contract Documents) upon approval and acceptance by the Public Works Commission. The Contractor shall replace or repair defects at no cost to the Public Works Commission during the warrantee period. No visible or potential leakage shall be allowed during the warranty period.

SCHEDULE OF SHOP DRAWING SUBMISSIONS

Project: Legion Hills Outfall and New Pinewood Drive Lift Station

Engineer:
Contractor:

Owner: Fayetteville Public Works Commission

Submittal ID Number	Item	Expected Submit Date	Required by Date	Submitted to Project Engineer	Submitted to PWC/City	Returned to Project Engineer	Returned to Contractor	Status	Remarks
GC-01	Schedule of shop drawing submissions								
GC-02	Project Sign Sketch								
GC-03	Schedule of Labor & Equipment Rates								
GC-04	Sample Property Owner Agreement								
GC-05	Executed Property Owner Agreement								
GC-06	Sample Dump Releases(s)								
GC-07	Executed Dump Release(s)								
GC-08	Emergency Response Personnel								
GC-09	Preliminary 45-day Schedule								
GC-10	Construction Schedule								
GC-11	Competent Person List								
GC-12	Pre-Construction Video								
GC-13	List of Subcontractor and Proposed work with Qualifications								
GC-14	Traffic Control Plan								
GC-15	NCDOT Traffic Control Plan								
GC-20	Contractor Certified Payrolls (To be submitted weekly)								
GC-30	Monthly Schedule Updates								
GC-40	MWBE Documentation for Contract Payments								
GC-100	One set of As-builts								
GC-101	O&M Manuals (IF APPLICABLE)								
GC-102	Consent of Surety								
GC-103	Insurance Certificates								

SCHEDULE OF SHOP DRAWING SUBMISSIONS

Project: Legion Hills Outfall and New Pinewood Drive Lift Station

Engineer:
Contractor:

Owner: Fayetteville Public Works Commission

Submittal ID Number	Item	Expected Submit Date	Required by Date	Submitted to Project Engineer	Submitted to PWC/City	Returned to Project Engineer	Returned to Contractor	Status	Remarks
GC-104	List of Manufacturers & Suppliers								
GC-105	Compliance with Davis Bacon Rates								
GC-106	Statement of Payment of Taxes								
GC-107	Affidavit of Payments of Debts & Claims								
GC-108	Affidavit of Release of Liens								
02210-01	Select Backfill / Borrow								
02272-01	Erosion Control Matting								
02301-01	Casing Pipe								
02301-02	Grouting Procedure								
02301-03	Carrier Pipe (if different from carrier pipe listed below)								
02305-01	Construction Procedures								
02305-02	Construction Sequence								
02305-03	Details & Installation Procedures								
02305-04	Equivalent List, Size & Capacity								
02305-05	Surface Movement Method of Detection								
02305-06	Calculations for Bursting Capacity & Required Equipment Size								
02305-07	Certification of Contractor Compliance with Manufacturer's Standards								
02305-08	Certificate of Training								

SCHEDULE OF SHOP DRAWING SUBMISSIONS

Project: Legion Hills Outfall and New Pinewood Drive Lift Station

Engineer:
Contractor:

Owner: Fayetteville Public Works Commission

Submittal ID Number	Item	Expected Submit Date	Required by Date	Submitted to Project Engineer	Submitted to PWC/City	Returned to Project Engineer	Returned to Contractor	Status	Remarks
02305-09	Document Manufacturer's Experience								
02305-10	PreBurst CCTV of Existing Pipelines to be Burst & Lateral Locations								
02305-11	Sewage Pumping Bypass Plan								
02500-01	Aggregate Base Course								
02500-02	Incidental Stone Base								
02500-03	Tack Coat								
02500-04	Type 1.19 Asphalt Mix								
02500-05	Type S-9.5 Asphalt Mix								
02630-01	RCP Storm Pipe								
02630-02	Storm Drain Structures								
02630-03	Storm Drain Castings, Frames, Grate & Hoods								
02730-01	PVC Sewer Pipe								
02730-02	PVC Sewer Pipe Fittings								
02730-03	DIP Sewer Pipe								
02730-04	DIP Fittings								
02730-05	Precast Manholes								
02730-06	Butyl Sealant								
02730-07	External Joint Wrap								
02730-08	Manhole Step								
02730-09	MH Ring & Cover								
02730-10	4" Flexible Coupling, PVC - C/O								
02730-11	4" Clean out Assembly								
02730-12	MH Boot								
02730-13	Strap and Anchor material for Drop Structures								

SCHEDULE OF SHOP DRAWING SUBMISSIONS

Project: Legion Hills Outfall and New Pinewood Drive Lift Station

Engineer:

Owner: Fayetteville Public Works Commission

Contractor:

Submittal ID Number	Item	Expected Submit Date	Required by Date	Submitted to Project Engineer	Submitted to PWC/City	Returned to Project Engineer	Returned to Contractor	Status	Remarks
02732-01	Air Release Valves								
02732-02	Force mains								
02753-01	Lift Station Vaults								
02753-02	Lift Station Piping								
02753-03	Lift Station Wet Wells								
02753-04	Lift Station Floats								
02753-05	Submersible non-clog sewage pumps								
02931-01	Sod								
02931-02	Fertilizer								
02933-01	Seed								
02933-02	Fertilizer								
03300-01	Concrete Mix Design								
03300-02	Reinforcing Bars								
03300-03	Welded Wire Mesh								
03300-04	Metal Forms								
03300-05	Form Release Oil								
03300-06	Expansion Joint Filler								
03300-07	Curing Compound								
03300-08	Brick								
03300-09	Concrete Masonry Units								
03300-10	Cement Mortar								
03300-11	Strength Tests								
09802-01	Ceramic Epoxy Lining Material								
13446-01	Lift Station SCADA								

SCHEDULE OF SHOP DRAWING SUBMISSIONS

Project: Legion Hills Outfall and New Pinewood Drive Lift Station

Engineer:
Contractor:

Owner: Fayetteville Public Works Commission

Submittal ID Number	Item	Expected Submit Date	Required by Date	Submitted to Project Engineer	Submitted to PWC/City	Returned to Project Engineer	Returned to Contractor	Status	Remarks
16010-01	Lift Station Electrical Contractor								
16010-02	Lift Station Electrical								
16621-01	Lift Station Generator								
16912-01	Lift Station Control Panel								

**DIVISION I
GENERAL REQUIREMENTS**

CONSTRUCTION SCHEDULE

PART 1 GENERAL

1.01 Work Included:

- A. This section specifies requirements and procedures in preparing and updating construction schedules and reports for planning, coordinating, executing and monitoring the progress of the work. The construction work shall be scheduled to be completed within the specified duration of the Contract.

1.02 Related Work Specified Elsewhere

- A. Special Provisions
- B. General Conditions
- C. Submittals

1.03 Scheduling Responsibilities

- A. The construction schedule will be used to monitor job progress. The Contractor will be responsible for providing all information concerning the sequencing, logic and durations of planned activities. The Contractor will be responsible for providing monthly update information on logic changes, percent complete, actual start and finish dates and duration changes. The Contractor will be required to produce the monthly, computerized printout of the schedule updates.
- B. Assembling the initial schedule in hand drawn or computer-generated (preferred) form is the responsibility of the Contractor.
- C. It should be clearly understood that the initial schedule and all update information must be provided by the Contractor and that this information is a representation of the best efforts of the Contractor and his subcontractors as to how they envision the work to be accomplished. Similarly, all progress information to be provided by and through the Contractor must be an accurate representation of his or his subcontractors' or suppliers' actual performance. The schedule shall at all times remain an accurate reflection of the Contractor's actual or projected sequencing of the work. Once accepted, adherence to the schedule shall be obligatory upon the Contractor and his subcontractor for the work under this Contract. Owner may require the Contractor to revise the schedule if, in the Project Engineer's judgment, the schedule does not accurately reflect the actual extension of the work, or is in violation of any provision of the Contract Documents. The Contractor shall provide the necessary information required to revise the schedule as often as is necessary during the course of performance of the work without additional cost to the Owner.

1.04 Progress of Work

- A. The work shall be started on the date indicated in the Notice to Proceed and shall be executed with such progress as may be required to prevent delay to other Contractors or to the general completion of this project. The Contractor shall at all times, schedule and direct his work so that it provides an orderly progression of the work to completion within the specified Contract Time. The Contractor shall account for traffic control requirements, access of citizens within the work area and the requirements for timely restoration.
- B. The Contractor agrees that, whenever it becomes apparent from the current monthly schedule update that delays to the planned progress of work have resulted and these delays are through no fault of the Owner and hence, the Contract completion date will not be met, or when so directed by the Project Engineer, he will prepare a recovery schedule outlining steps to recover time and to complete the project on schedule.
- C. The Contractor shall submit for review a written statement of the steps he intends to take, to remove or arrest the delay to the schedule. The Contractor shall promptly provide such level of effort at no additional cost to the Owner. In addition, should schedule delays persist; the Contractor's surety will be asked to attend a schedule update meeting.
- D. Failure of the Contractor to comply with the requirements of this provision shall subject him to, at the Owner's sole discretion, withholding, in partial or in total, payments otherwise due the Contractor for work due under this Contract. The Contractor agrees that any withholding of monies is not a penalty for noncompliance, but is an assurance for the Owner that funds will be available to implement these requirements should the Contractor fail to do so, since failure of the Contractor to comply with these requirements shall mean that the Contractor failed to execute the work with such diligence as to ensure its completion within the time for completion.

PART 2 CONSTRUCTION SCHEDULE

2.01 Schedule Requirements

- A. The schedule shall show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned by the Contractor. The schedule shall show how the start date of a given activity is dependent on the completion date of preceding activities how its completion restricts the start of succeeding activities. A time scaled precedence format will be followed. The schedule shall indicate the start date, completion date, and duration (in days), of each activity.
- B. The Schedule Activities shall be developed into two major groups:
 - 1. Construction Activities - Construction activities will be physical work activities that describe how the job will be constructed. Work shall include planned restoration and paving.
 - 2. Post Construction Testing, Start-up, Training and Close-out - Activities for this group shall include all work required satisfying appropriate specification

requirements sections and meeting the requirements of final completion. There are at least 3 mandatory activities: Punch list, Final Walkthrough and Project Complete.

- C. The Contractor shall break the work into activity durations of one to twenty (1 to 20) working days each, except for non-construction activities (such as procurement of materials and delivery of equipment) and other activities that may require longer durations. To the extent feasible, activities related to a specific physical or geographic area of the project should be grouped on the schedule for ease of understanding and simplification. The selection and number of activities shall be subject to the review of the Project Engineer.
- D. Each activity on the schedule shall have indicated for it the following:
 - 1. Construction activities will be divided by easily recognizable division points such as stationing or street names, area of work, etc.
 - 2. A brief description of the activity will be included. If this description is not definitive, a separate listing of each activity and a descriptive narrative may be required.
 - 3. Where the Contractor intends to perform work concurrently, a resource or crew identifier will be assigned to the activity to indicate parallel paths.
 - 4. Established PWC holidays and other non-work days will be excluded from the schedule.
- E. Failure to include on the schedule any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within the applicable Contract Time.
- F. A schedule which shows a completion of any portion of the construction work prior to the Contract Time dates may be accepted but in no event shall be acceptable as a basis for a claim for any delay against the Owner by the Contractor.

PART 3 SCHEDULE OF SUBMITTALS

3.01 Schedule Implementation

- A. Within (10) calendar days after the Notice to Proceed, the Contractor shall submit six (6) copies of their proposed construction schedule for the entire Contract duration to the Project Engineer.
- B. The Contractor shall submit hard copies and a schedule on disk in a format wholly compatible with Microsoft Project. Submission of an electronic schedule does not preclude any other of the aforementioned individual activity requirements.
- C. If a review of the submitted schedule indicates a work plan that will not complete the work within the Contract time, it shall be the responsibility of the Contractor to revise the schedule as required and resubmit it until it is acceptable. Failure by the Contractor to

submit an acceptable schedule may, at the Owner's sole discretion, be cause for the withholding of any partial payment(s) otherwise due under the Contract.

- D. Acceptance of the schedule shall not constitute a representation by the Owner that the work can be completed as shown on the schedule.

3.02 Schedule Updates

A. The Contractor shall submit a Schedule Update on the Monday prior to the monthly progress meeting, (or as directed by the Project Engineer), to allow the Project Engineer to review the schedule. The schedule shall be up-to-date as of the previous Friday or as directed by the Project Engineer. Actual progress of the previous month shall be recorded and future activities will be reviewed. The duration of activities and their logical connections may be revised as needed. Decisions made at these meetings and agreed to by all parties are binding with the exception that no contractual completion dates will be modified without formal written requests and acceptance as specified in the Contract Documents. The Contractor must provide the following information for each update at a minimum:

1. Actual start and finish dates for all completed activities.
2. Actual start dates for all started but incomplete activities including remaining durations and/or percent completes.
3. Revisions in the logic, critical path or resource assigned to an activity that would affect the anticipated early start of all activities not yet started.
4. Any approved extension of Contract time shall be included in the next monthly updating of the schedule.

B. Provide a Monthly Progress Status Report that provides the following items:

1. Summarized revisions made to the Construction Schedule since the previous submittal.
2. Work anticipated to be started during the next period, including those activities already in progress.
3. Problem areas, anticipated delays, and the impact on the schedule.
4. Corrective action.
5. The effect of changes on schedules of other prime Contractors in adjacent work areas.

C. Failure to provide update information listed above, or failure to attend progress meetings may result in the Owner withholding partial payments.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

01400 QUALITY CONTROL

QUALITY ASSURANCE

Quality: All materials shall be new and correctly designed, and shall conform to the requirements outlined in these Contract Documents. They shall be standard first-grade quality produced by expert workmen and be intended for the use for which they are offered. Materials which, in the opinion of the Public Works Commission, are inferior or of a lower grade than indicated, specified, or required will not be acceptable.

Source Limitations: To the greatest extent possible for each unit of Work, the Contractor shall provide products, materials, or equipment from a single manufacturer.

Compatibility of Options: If the Contractor cannot obtain all necessary products, materials, and/or equipment from a single manufacturer, the Contractor shall submit compatible products, materials, and/or equipment to the Public Works Commission for review and approval. Once the Public Works Commission has issued approval of the proposed products, materials, and/or equipment, the Contractor shall only utilize that manufacturer's products, materials, and/or equipment, unless otherwise approved in writing by the Public Works Commission.

QUALITY CONTROL

Quality control is the sole responsibility of the Contractor and shall include the activities of his Subcontractors and all suppliers as required.

TESTING SERVICES

The Contractor shall cooperate with the Public Works Commission's Consultant performing required testing and provide equipment, access, or other means required at no additional expense to the Public Works Commission. The Contractor shall be responsible for coordinating testing with the PWC Project Coordinator. The Contractor shall be responsible for all costs incurred by the Public Works Commission's Consultant when scheduled testing cannot be performed.

The Public Works Commission shall employ and pay for the services of an independent laboratory for specified testing as outlined in these Contract Documents, with the following exceptions:

- If Laws and Regulations of any public body having jurisdiction specifically require any part of the Work to be tested, inspected, or approved by an employee or other representative of that public body, the Contractor shall be responsible for arranging and obtaining such inspections and/or approvals. The Contractor shall bear all costs associated with the required testing, inspections, and/or approvals, and shall furnish the Public Works Commission all required documentation that the required testing, inspection, and/or approvals have been obtained.
- If any part of the Work is found to be defective and not in compliance with the Contract Documents, the Contractor shall be responsible for all subsequent testing necessary to prove that the Work has been brought

into compliance. Any necessary testing to ensure compliance shall be directed by the PWC Project Coordinator and/or PWC Project Engineer.

- When scheduled testing by the Public Works Commission's Consultant cannot be performed.
- Arranging and obtaining any required inspections, testing, or approvals required in connection with the Public Works Commission's acceptance of a material supplier, or equipment proposed to be incorporated into the Work, or materials, mix designs, etc. submitted for approval prior to purchase for incorporation into the Work. All inspections, tests, and approvals shall be performed by organizations acceptable to the Public Works Commission.

PRODUCT EVALUATION

Testing shall be accomplished as deemed necessary by the Public Works Commission to ensure that the products conform to the requirements of the Contract Documents.

The work or actions of the testing laboratory shall in no way relieve the Contractor of his obligations under the Contract. The laboratory testing work will include such inspections and testing required by the Contract Documents, existing laws, codes, ordinances, etc. The testing laboratory will have no authority to change the requirements of the Contract Documents, nor perform, accept or approve any of the Contractor's Work.

The Contractor shall allow the Public Works Commission ample time and opportunity for evaluation and testing materials to be used in the Work. The Contractor shall advise the Public Works Commission promptly upon placing orders for materials so that arrangements may be made, if desired, for evaluation before shipment from the place of manufacture. The Contractor shall at all times furnish the Public Works Commission and his representatives, facilities including labor, and allow proper time for evaluation and testing materials, and workmanship. The Contractor must anticipate that possible delays may occur due to the necessity of materials being inspected and accepted for use. The Contractor shall furnish, at his own expense, all samples of materials required by the Public Works Commission for testing, and shall make his own arrangements for providing water, electric power, or fuel for the various evaluation and tests of structures and materials.

The Public Works Commission will bear the cost of all tests, evaluation, or investigations undertaken by the order of the PWC Project Engineer for the purpose of determining conformance with the Contract Documents if such tests, evaluation, or investigations are not specifically required by the Contract Documents, and if conformance is ascertained thereby. Whenever nonconformance is determined by the Public Works Commission as a result of such tests, evaluation, or investigations, the Contractor shall bear the full cost of any additional tests, evaluations and investigations, which are ordered by the Public Works Commission to ascertain subsequent conformance with the Contract Documents.

EVALUATION AT PLACE OF MANUFACTURE

Unless otherwise specified, all products and materials shall be subject to evaluation by the Public Works Commission at the place of manufacture.

The presence of the Public Works Commission at the place of manufacture however, shall not relieve the Contractor of the responsibility for furnishing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the Contractor, and said duty shall not be avoided by any act or omission on the part of the Public Works Commission.

SAMPLING AND TESTING

Unless otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered. However, the Public Works Commission reserves the right to use any generally-accepted system of sampling and testing which will ensure that the quality of the workmanship is in full accord with the Contract Documents.

Any waiver by the Public Works Commission of any specific testing or other quality assurance measures shall not be construed as a waiver of any requirements of the Contract Documents. The Public Works Commission may require a guarantee of substantial performance and/or a performance bond to ensure any necessary corrective or remedial Work, should a waiver be granted.

The Public Works Commission reserves the right to make independent investigations and tests. Failure of any portion of the Work to meet any of the requirements of the Contract Documents, shall be reasonable cause for the Public Works Commission to require the removal or correction and reconstruction of any such work in accordance with the Contract Documents. In addition to any other evaluation, observation or quality assurance provisions that may be specified, the Public Works Commission shall have the right to independently select, test, and analyze, at their expense, additional test specimens or any or all of the materials to be used. Results of such tests and analyses shall be considered along with the tests or analyses made by the Contractor to determine compliance with the applicable specifications for the materials so tested or analyzed. The Contractor shall be responsible for all costs of removal, correction, and reconstruction or repair of any such Work that fails to meet the requirements of the Contract Documents.

SITE INVESTIGATION AND CONTROL

The Contractor shall verify all dimensions in the field and shall check field conditions continuously during construction. The Contractor shall be solely responsible for any inaccuracies built into the Work due to their failure to comply with this requirement.

The Contractor shall inspect related and appurtenant Work and shall report in writing to the Public Works Commission any conditions which will prevent proper completion of the Work. Failure to report any such conditions shall constitute acceptance of all site conditions, and any required removal, repair, or replacement caused by unsuitable conditions shall be performed by the Contractor at their sole cost and expense.

RIGHT OF REJECTION

The Public Works Commission shall have the right, at all times, to reject any articles or materials to be furnished hereunder which, in any respect, fail to meet the requirements of the Contract Documents, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the Work. If the Public Works Commission, through an oversight or otherwise, has accepted materials or Work which is defective or which is contrary to the Contract Documents, such materials, no matter in what stage or condition of manufacture, delivery, or erection, may be subsequently rejected by the Public Works Commission.

The Contractor shall promptly remove rejected articles or materials from the Work after notification of rejection. All costs of removal and replacement of rejected articles or materials as specified herein shall be borne by the Contractor.

WATERTIGHTNESS OF STRUCTURES

It is the intent of these Contract Documents that all Work shall be performed as required by quality construction to ensure proper sealing so that groundwater and/or rainwater will not leak into any repaired collection line, service lateral, or manhole.

The Contractor shall provide at its own expense all labor, material, temporary bulkheads, pumps, water, measuring devices, etc., necessary to perform the required tests.

HYDRAULIC UPLIFT ON STRUCTURES

The Contractor shall be completely responsible for any pipelines or manholes that may become buoyant before the Work is completed and accepted. The Contractor shall take all necessary steps to prevent any structures from becoming buoyant. Damage to any structures due to floating or flooding shall be repaired or replaced at the Contractor's expense.

TIME OF OBSERVATION AND TESTS

Samples and test specimens required under these Contract Documents shall be furnished and prepared for testing in ample time for the completion of the necessary tests and analyses before said articles or materials are to be used. The Contractor shall furnish and prepare all required test specimens within the scope of the Contract. Except as otherwise provided in the Contract Documents, the performance and cost of the required tests will be the responsibility of the Public Works Commission. However, the costs of any test which shows unsatisfactory results shall be borne by the Contractor. Whenever the Contractor is ready to backfill, bury, cast in concrete, or otherwise cover any Work under the Contract, the Public Works Commission shall be notified not less than twenty-four hours in advance to request inspection before beginning any such Work of covering. Failure of the Contractor to notify the Public Works Commission a minimum of twenty-four hours in advance of any such inspections shall be cause for the Public Works Commission to order a delay in the Contractor's schedule to allow time for inspections. Any remedial or corrective Work required, and all costs of such delays, including its effect upon other portions of the Work, shall be borne by the Contractor.

- END OF SECTION -

**DIVISION 1
GENERAL REQUIREMENTS**

01700 – PROJECT CLOSEOUT

GENERAL

The Contractor shall promptly remove from the vicinity of the completed Work, all rubbish, unused materials, concrete forms, construction equipment, temporary structures and facilities, construction signs, tools, scaffolding, materials, supplies and equipment which may have been used in the performance of the work. The Contractor shall broom clean paved surfaces and rake clean other surfaces of grounds. Final acceptance of the Work by the Public Works Commission will be withheld until the Contractor has satisfactorily complied with the foregoing requirements for final cleanup of the project site.

The Contractor shall thoroughly clean all materials, equipment and structures; all marred surfaces shall be touched up to match adjacent surfaces.

The Contractor shall remove spatter, grease, stains, fingerprints, dirt, dust, labels, tags, packing materials and other foreign items or substances from interior and exterior surfaces, equipment, signs and lettering.

The Contractor shall remove paint, clean and restore all equipment and material nameplates, labels and other identification markings.

The Contractor shall maintain cleaning until project, or portion thereof, is accepted by the Public Works Commission.

The Contractor shall:

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use each type of cleaning material on only those surfaces recommended by the cleaning material manufacturer.
- C. Use only materials which will not create hazards to health or property.

CLOSEOUT TIMETABLE

The Contractor shall establish dates for testing, acceptance periods, and on-site instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the Public Works Commission and their authorized representative's sufficient time to schedule attendance at such activities.

FINAL SUBMITTALS

Before the final acceptance of the project, the Contractor shall submit to the Public Works Commission certain records, certifications, etc., which are specified elsewhere in the Contract Documents. Missing, incomplete or unacceptable items, as determined by the Public Works Commission, shall constitute grounds for withholding final payment to the Contractor. A partial list of such items appears below, but it shall be the Contractor's responsibility to submit any other items which are required in the Contract Documents:

- A. Written Test results of project components.
- B. Written guarantees, where required.
- C. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
- D. Pre-construction photos (5" x 7").
- E. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

PUNCH LISTS

Final cleaning shall be scheduled upon completion of the project.

The Public Works Commission will make their final inspection whenever the Project Coordinator has determined that the work is ready for the inspection. Any work not found acceptable and requiring cleaning, repair and/or replacement will be noted on the "Punch" list. Work that has been inspected and accepted by the Public Works Commission shall be maintained by the Contractor, until final acceptance of the entire project.

Whenever the Contractor has completed the items on the punch list, he shall coordinate an inspection with the PWC Project Coordinator to verify that the punch list items have been satisfactorily completed. This procedure will continue until the entire project is accepted by the Public Works Commission. The "Final Payment" will not be processed until the entire project has been accepted by the Public Works Commission and all of the requirements in this Specification Section have been satisfied and any additional requirements as outlined in Section 01000 – Special Conditions of these Contract Documents.

TOUCH-UP AND REPAIR

The Contractor shall touch-up and repair damage to all existing facilities and surfaces. If in the opinion of the Public Works Commission the touch-up work is not satisfactory, the Contractor shall repeat the item.

MAINTENANCE AND GUARANTEE

The Contractor shall comply with all maintenance and guarantee requirements of the Contract Documents.

Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the Contractor which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the Contractor shall have obtained a statement in writing from the affected private Owner or public agency releasing the Public Works Commission from further responsibility in connection with such repair or resurfacing.

— END OF SECTION —

DIVISION 2
SITE WORK

02111 SITE CLEARING (Utility)

SCOPE

Work described in this section includes clearing and grubbing, site, protecting adjoining property and trees as indicated on the drawings or as specified herein. The work shall include the complete removal and satisfactory disposal of all growth including trees, stumps, logs and roots; organic material, and other debris or items that interfere with construction operations. The site clearing operations shall be conducted in a manner to insure minimum interference with roads and other adjacent occupied or used facilities.

PROTECTION OF TREES AND VEGETATION

Trees and vegetation to be left standing shall be protected from damage incidental to clearing, grubbing, and construction operations. The protection shall include un-necessary cutting, breaking or skinning of roots; skinning and bruising of bark; smothering of trees by stockpiling construction materials or excavated material within the drip line; excessive foot and vehicular traffic including parking of vehicles within drip line. Trees and vegetation receiving damage shall be repaired or replaced in a manner acceptable to the Engineer.

Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1 -1/2" or more in diameter and shall be trimmed of live branches to such heights and such manner as directed. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branch. Cuts more than 1-1/2" in diameter shall be painted with an approved tree wound paint.

CLEARING AND GRUBBING

Clearing and grubbing shall be performed within the permanent right-of-ways. In the interest of conserving natural resources and protecting the environment, clearing shall be kept to a minimum within the temporary right-of-ways limits. Where permanent and temporary right-of-ways are offset, the additional temporary area may be used as a "buffer" zone to aid in sediment control where possible. Clearing shall consist of cutting trees, with a stump left not more than two inches (2") above natural ground. Saleable timber shall become the property of the Contractor. Reasonable care shall be taken during construction to avoid damage to vegetation not located in the right-of-ways. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed to improve the appearance. Tree trunks receiving damage shall be treated with approved tree dressing.

Several areas along the main where a temporary easement is indicated on the plans and is located in people's yards, the Contractor shall limit clearing only as absolutely necessary for the sewer installation. Where possible, individual trees shall be worked around and preserved. These particular areas will be noted on the plans.

In the interest of erosion and sediment control, if possible, clearing and grubbing should be staged in ½ mile sections or less. In all cases, the time of disturbance between clearing and grubbing operations and actual sewer line construction should be kept to a minimum, particularly if ditches and temporary roads are utilized for access to the project.

DIVISION 2 SITE WORK

02211 GRADING, UTILITIES

GENERAL

This section covers grading for the roadways and drives including all excavations, formation of embankments, preparation of subgrade for pavements and finishing and dressing of graded earth areas, shoulders, and ditches.

MATERIALS

Topsoil, material obtained from excavation suitable for topsoils, is defined as natural, friable soil, characteristics of representative soils in the vicinity that produce heavy growth of crops, grass, or other vegetation. Topsoil shall be free from roots, stones, and other materials that hinder grading, planting, and maintenance operations, and free from objectionable weed seeds.

Satisfactory soil materials are defined as those in accordance with AASHTO Soil Classification Groups, A-1, A-2-4, A-2-5 and A-3 (or in accordance with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, SP, SC.) as determined by the Engineer. Satisfactory material shall be free from roots, organic matter, trash, debris, frozen material or stones larger than three (3) inches in any dimension.

Unsatisfactory soil materials are defined as those in accordance with AASHTO Soil Classification Groups A-2-6, A-2-7, A-4, A-5, A-6, A-7 (or in accordance with ASTM D2487 soil classification groups GC, ML, MH, CL, CH, OL, OH, and PT) as determined by the Engineer.

Materials determined by the Engineer as too wet or too soft to provide a stable subgrade, foundation, or fill will be classified as unsatisfactory regardless of soil classification. The Engineer may require the Contractor to condition the wet and/or soft soils to provide a stable subgrade, foundation, or fill. The Contractor shall recondition the materials at no additional cost to the Owner.

CONSERVATION OF TOPSOIL

Areas designated for operations that contain a blanket of soil, which is more satisfactory for the growth of grass than the embankment material to be placed, shall be stripped to a depth of approximately four (4) to six (6) inches and placed in convenient stockpiles as directed in the field, for later use as a topsoil blanket on the new graded areas specified herein, or as designated. The stripping of material for use as topsoil shall be carefully determined and only the quantity required shall be stripped and stockpiled. Material ordered stockpiled shall be placed in a satisfactory manner to afford drainage. When grading operations permit, instead of stockpiling, the topsoil shall be hauled and spread directly on the areas to receive topsoil.

Topsoil shall be placed on all shoulders, slopes, ditches, and other earth areas graded under this contract, excluding borrow areas, unless otherwise specified on the plans. Topsoil shall be uniformly placed on these areas to a compacted depth of not less than three (3) inches or more than four (4) inches. The material shall be free from clods of soil, matted roots greater than ½ inch in diameter, and any other objectionable material which might hinder subsequent grass and mowing operations. The material shall be placed, leveled, and lightly compacted with at least one pass of a cultipacker, or other approved equipment weighing 100 to 160 pounds per linear foot of roller, to required cross sections, but shall be left one-tenth of a foot below the finished earth grade as specified in the paragraph FINISHED EXCAVATION.

BORROW EXCAVATION (Select Backfill)

Where satisfactory materials are not available in sufficient quantities from the required excavation, approved materials shall be obtained from borrow areas. Borrow excavation material shall be supplied by the Contractor from borrow areas located off-site. The work covered by this section shall consist of the excavation of approved material from borrow sources and the hauling and utilization of such material as required on the plans or directed by the Engineer. The borrow material shall be approved by the Engineer and shall not contain roots, root mats, stumps, highly plastic clay or other unsatisfactory materials. The material shall be a soil material which meets requirements of AASHTO M1 45 for soil classification A-i-a, A-i-b, A-2-A, A-3 acceptable for select backfill. All borrow material shall be in accordance with the NCDOT Standard Specification for Roads and Structures, most recent edition. Borrow excavation shall be in accordance with the NCDOT Standard Specification for Roads and Structures, most recent edition. Excess material removed within the work limits, suitable for borrow excavation, during "Unclassified Excavation" operations shall not be considered or paid for as borrow excavation.

UNDERCUT EXCAVATION

When the Owner determines that the natural soil materials in areas where fill is to be placed, or in the finished graded subgrade roadway cross section, or in areas supporting structures or pipes, are determined to have a poor supporting value, the Engineer may require the Contractor to remove the materials and backfill with approved properly compacted material to the finished graded section. The Contractor shall conduct undercut operations in such a way that the Engineer can take the necessary measurements before any backfill is placed. Any material removed and backfilled without the approval of the Engineer, and/or all necessary measurements taken, and/or to a depth, length or width exceeding the dimensions shall not be considered undercut excavation and will not be paid for such. All undercut excavation shall be in accordance with the NCDOT Standard Specification for Roads and Structures, most recent edition. Undercut excavations suitable for backfill on toes of slopes and other approved areas will not be paid for as borrow excavation.

FINISHED EXCAVATION

All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations, except as otherwise specified. Ditches shall be finished to permit adequate drainage. The surface of areas to be turfed shall be finished to a smoothness suitable for the application of turfing materials. Surfaces shall be finished not more than 0.15 foot above or below the established grade and approved cross section. In areas where the bulking of soil as a result of grassing operations will tend to retard surface drainage along the edge of pavements, the finished grades shall be left 0.1 foot below grade prior to grassing.

Newly graded areas shall be protected from traffic and from erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades re-established to the required elevations and slopes. Embankments and excavations shall be kept shaped and drained. Ditches and drains along subgrade shall be maintained in such a manner as to drain effectively at all times. The finished subgrade shall not be disturbed by traffic of other operations and shall be protected and maintained by the Contractor in a satisfactory condition until subbase, base, or pavement is placed. The storage or stockpiling of materials on the finished subgrade shall not be permitted. No base course or pavement shall be laid until the subgrade has been checked and approved, and in no case shall base, surfacing, or pavement be placed on a muddy, spongy, or frozen subgrade. All work shall be conducted in accordance with the environmental protection requirements of the contract.

**DIVISION 2
SITE WORK**

02222 EXCAVATION AND BACKFILLING FOR UTILITY SYSTEMS

GENERAL

Work described in this section consists of the excavation, backfill, compaction, and finish grading required to install the utility systems. The intent and purpose of these specifications is to require a complete and satisfactory installation in every respect and any defect in material or workmanship shall be cause for the replacement and correction of such defect as directed by the Public Works Commission.

RELATED SECTIONS

- A. 02305 – Pipe Bursting
- B. 02660 – Water Distribution
- C. 02730 – Sanitary Sewer Systems
- D. 02732 – Sewage Force Mains
- E. Chapter 24 of the City of Fayetteville Ordinance (most recent version)

MATERIALS

Suitable soil materials are defined as those in accordance with AASHTO Soil Classification Groups A-1, A-2-4, A-2-5 and A-3 (or in accordance with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, SP, SC) as determined by the Public Works Commission. Suitable material shall be free from roots, organic matter, trash, debris, frozen material or stones larger than three (3) inches in any dimension.

Unsuitable soil materials are defined as those in accordance with AASHTO Soil Classification Groups A-2-6, A-2-7, A-4, A-5, A-6, A-7 (or in accordance with ASTM D2487 soil classification groups GC, ML, MH, CL, CH, OL, OH, and PT) as determined by the Public Works Commission. Unsuitable material as defined above shall be replaced with select material as determined by the Public Works Commission.

Suitable materials determined by the Public Works Commission as too wet or too soft to provide a stable subgrade, foundation, or fill will be deemed as unsuitable regardless of soil classification. Materials deemed unsuitable shall be conditioned or replaced, as directed by the Public Works Commission. The Contractor shall recondition and stockpile the materials at no additional cost to the Public Works Commission.

EXCAVATION

All excavation shall be to the lines and grades indicated. The work shall consist of the excavation, placement, and compaction of suitable material as outlined in this Specification and proper disposal of all unsuitable materials. During excavation, suitable material for backfilling shall be stockpiled. The

stockpiles shall be protected from contamination by unsuitable excavated material or other material. If any material becomes unsuitable, such material, if directed, shall be removed and replaced with suitable on-site or imported material from approved sources at no additional cost to the Public Works Commission.

Where the line parallels a creek and/or ditch the excavated material shall be stockpiled opposite the creek, with the trench separating the two. Adequate drainage shall be provided for the stockpiles and surrounding areas by means of ditches, dikes, or other approved methods. Grading shall be done to prevent surface water from entering the excavation. Any water within the trench shall be removed.

Suitable excavated material shall be stockpiled or placed in the excavation's backfill. Excavation and filling shall be performed in a manner and sequence that will provide drainage at all times. Unauthorized over excavation shall be backfilled with select bedding material at no additional cost to the Public Works Commission. The Contractor, at their expense, shall properly dispose of all excess excavated material unless directed to place it in another area of the project by the Public Works Commission. The Contractor's obligation to remove and dispose of excess materials shall in no manner convey to him any rights of property in any material taken from any excavation.

It shall be the Contractor's responsibility to investigate the site and existing conditions. No compensation will be allowed due to excavation and/or grading being different than anticipated.

TRENCH EXCAVATION

The trench width shall be in accordance with the PWC standard details. All work shall be in accordance with the applicable OSHA regulations.

The subgrade beneath the centerline of the pipe shall provide uniform support for each section of the pipe. Stones three (3) inches or greater in any dimension, or as recommended by the pipe manufacturer, whichever is smaller, shall be removed.

Where unsuitable material is encountered at the elevation established for installation of pipe or structures, additional undercut excavation shall be done as directed by the Public Works Commission. The additional undercut excavated area shall be backfilled with stone bedding material. Unauthorized undercut excavation shall be backfilled with stone bedding material and compacted as directed by the Public Works Commission. The Contractor shall conduct undercut operations in such a way that the Public Works Commission can take the necessary measurements before any backfill is placed. Any material removed and backfilled without the approval of the Public Works Commission, and/or all necessary measurements taken, and/or to a depth, length or width exceeding the dimensions shall not be considered undercut excavation and will not be paid for such.

Where unsuitable material is encountered at the elevation established for installation of roads, parking lots, or other paved areas, additional undercut excavation shall be done as directed by the responsible agency (i.e., City of Fayetteville, Town of Hope Mills, NCDOT, etc.). The additional undercut excavated area shall be backfilled with stone bedding material. Unauthorized undercut excavation shall be backfilled with

stone bedding material and compacted as directed by the responsible agency. The Contractor shall conduct undercut operations in such a way that the responsible agency can take the necessary measurements before any backfill is placed. Any material removed and backfilled without the approval of the responsible agency, and/or all necessary measurements taken, and/or to a depth, length or width exceeding the dimensions shall not be considered undercut excavation. All undercut excavation shall be in accordance with the NCDOT Standard Specification for Roads and Structures (most recent edition), or the responsible agency's specifications.

Excavation for manholes, meter vaults, or similar structures shall leave a minimum of 12-inches clear space around the structure. Removal of unsuitable material shall be as specified above. Preparation of the subgrade shall be in accordance with the applicable detail and as directed by the Public Works Commission.

PIPE LAYING

All pipe shall be installed in accordance with PWC Specification Section 02660 – Water Distribution, Specification Section 02730 – Sanitary Sewer Systems, and/or PWC Specification Section 02732 – Sewage Force Mains.

TRENCH SAFETY

All excavations shall comply with all Federal, State, and local rules and regulations. The Contractor shall have a trenching and shoring "competent" person on the job at all times when there is an open excavation. Under no circumstance shall an employee of the Public Works Commission be considered the "competent" person for the operation.

TRENCH STABILIZATION (SHORING)

The Contractor shall furnish, install, and maintain all necessary shoring to ensure a safe excavation. The method of shoring and excavation shall be in strict accordance with OSHA Regulations. The Contractor shall be responsible for installation, maintenance, and removal of all trench stabilization measures. The Contractor shall be responsible for any damage to adjacent structures resulting from the installation, maintenance, removal, or absence of trench stabilization measures.

DEWATERING

Excavations shall be kept dry at all times. Any required dewatering shall be the Contractor's responsibility. The Contractor shall be responsible for any damage to the adjacent property resulting from the installation, maintenance, discharge, and removal of the dewatering system. All discharge from the dewatering system shall be in accordance with the applicable erosion control rules and regulations.

BACKFILL

Backfill shall consist of suitable material free from debris, stone, etc. The backfill shall be brought up evenly on both sides of the pipe for the full length of the pipe. The backfill operation shall be conducted to prevent damage and/or movement of the pipe.

Backfill material in trenches shall be placed in layers not exceeding six (6) inches loose thickness to a point at least 12-inches above the pipe compacted to 90 percent maximum density. The remainder of the trench shall be backfilled in layers not exceeding six (6) inches in loose thickness compacted as specified in subparagraph COMPACTION. Each layer shall be thoroughly compacted by an approved mechanical tamping device.

Backfill material around structures shall be placed in a manner that the structure will not be damaged. No backfill shall be placed around manholes, thrust blocks, or similar structures until the concrete has been allowed to cure for three (3) days. The backfill material shall be compacted as specified in subparagraph COMPACTION.

No backfilling will be allowed when weather conditions prevent compliance with these Specifications.

BORROW EXCAVATION (Select Backfill)

Borrow excavation material shall be supplied by the Contractor when sufficient quantities of suitable materials are not available within the project limits. The borrow material shall be approved by the Public Works Commission and shall not contain roots, root mats, stumps, highly plastic clay or other unsatisfactory materials. All borrow material shall be in accordance with the NCDOT Standard Specification for Roads and Structures, most recent edition.

COMPACTION

Backfill shall be compacted in accordance with the following table as a percentage of the maximum density at optimum moisture content as determined by the Standard Proctor Test, ASTM D-698.

<u>Area</u>	<u>Percent ASTM D-698 Maximum Dry Density</u>
Around and 1' above top of pipe	95
Remaining trench (within 4' of subgrade)	95
Pavement subgrade and shoulders	
Last 1' of fill (below subgrade)	100
Last 3' of fill to 12" below subgrade	98
Base material	100
Adjacent to structures (Areas not paved)	95
Under structures	98
Utility Outfalls (Cross Country)	95

Revised January 2016

Compaction testing may be performed at the option of the PWC Project Coordinator, or as required by the responsible agency (i.e., City of Fayetteville, NCDOT, etc.). Compaction testing shall be done in accordance with the responsible agency's requirements. Deficiencies shall be corrected by the Contractor without additional cost to PWC.

FINISHED EXCAVATION

All areas covered by the project shall be uniformly graded to the established elevations and approved cross sections. Ditches shall be graded to permit proper drainage. Newly graded areas shall be protected from traffic and/or from erosion, and any settlement or washing prior to acceptance shall be repaired and the required grades re-established. Ditches and drains along the subgrade shall be maintained to drain at all times. The finished subgrade shall be protected and maintained by the Contractor. The storage or stockpiling of materials on the finished subgrade shall not be permitted. No base course or pavement shall be laid until the subgrade has been checked and approved. All work shall be conducted in accordance with the environmental protection requirements of the Contract.

**DIVISION 2
SITE WORK**

02272 EROSION CONTROL - GENERAL PROVISIONS

GENERAL

The Contractor shall be responsible for conducting his site grading and drainage operations in such manner as to prevent or lessen excessive soil erosion of the construction site work areas. He shall at all times provide satisfactory means to prevent or minimize the movement and washing of large quantities of soil. The Contractor is expected to review his site grading and drainage operations periodically to determine the areas most susceptible to erosion by excessive rainfall and periodically maintain all installed measures for the project duration. The Contractor shall correct any deficiencies or problem areas as directed by the Owner or the North Carolina Department of Environment and Natural Resources (NCDENR) inspector within 48 hours.

EXECUTION

The Contractor's attention is directed to the fact that unless exposed earth areas are properly cared for during construction, they may result in substantial sedimentation damage downstream from the construction area. He shall at all times provide satisfactory means to prevent or minimize the movement and washing of quantities of soil onto pavements or into adjacent ditches, swales, inlets, and drainage pipes, to avoid the possibility of these structures becoming clogged with soil. Should this happen as a result of erosion at the site of this construction, the Contractor will be required to immediately provide means for removal of the soil and/or debris from the structures to restore the proper functioning of these structures. The Contractor shall assume all responsibilities to the affected property owners for correction of all damages. The Contractor is expected to review his site grading and drainage operations periodically with the Owner with the view in mind of determining the areas most susceptible to erosion by excessive rainfall and shall take necessary temporary measures in sufficient time to minimize the washing away of the site soils that would likely occur before the areas are finished graded, topsoiled and planted. The temporary measures to be provided by the Contractor at the critical areas may consist of, but not limited to, any one or a combination of the following, or by other approved means selected by the Contractor:

Silt Fence
Gravel Construction Entrance/Exit
Inlet Protection

If any earthwork is to be suspended for any reason whatsoever for longer than 15 days, the disturbed areas shall be seeded with temporary vegetative cover or otherwise protected against excessive erosion during the suspended period. Suspension of work in any area of operation does not relieve the Contractor of the responsibility for the erosion control and temporary measures will not be considered cause for a change in the price bid.

MAINTENANCE

The Contractor shall inspect and maintain each erosion control measure until the project is stabilized and accepted. After each significant rainfall, the Contractor shall remove and dispose of silt accumulation from each individual measure. The following maintenance may be required for each specific erosion and sediment control measure:

Silt Fence: Fabric shall be removed and replaced whenever deteriorated to such an extent the effectiveness is reduced. The toe of the fabric shall be buried a minimum of 6 inches.

Gravel Construction

Entrance/Exit: Periodic top dressing with two inches (2") of graded stone. Remove all objectionable materials spilled, washed or tracked onto public roadways.

Sediment

Trap: Remove sediment and restore trap to original dimensions when accumulated silt volume equals $\frac{1}{2}$ the design depth. Replace the contaminated gravel facing.

Gravel Inlet

Protection: Remove sediment as necessary to provide adequate volume. Replace contaminated gravel facing if required.

Rip-Rap: Make repairs to dislodged stone and/or supplement as required if erosion occurs during heavy rainfalls.

REMOVAL

After the area has been stabilized and the project accepted, the Contractor shall remove all temporary erosion and sediment control measures. Silt fences shall be removed, sediment traps/pits and/or basins filled with suitable soil, compacted and seeded. The materials removed shall remain the property of the Contractor and shall be disposed of off-site, or may be reused in other locations if approved by the Owner.

DIVISION 2
SITE WORK

02301 BORING AND JACKING (ROADWAYS AND RAILROADS)

GENERAL

Installation shall be by dry boring and jacking of a smooth wall steel pipe that is true to line and grade under roadways or where indicated on the plans, all in accordance with these specifications and recommendations of the pipe manufacturer. The Contractor shall notify the Public Works Commission's Project Coordinator a minimum of seven (7) days prior to any contemplated work. All required permits and approvals shall be secured prior to commencing work.

MATERIALS

Materials to be used shall be appropriate for the installation method chosen by the contractor. All materials shall be submitted to the Public Works Commission for approval, prior to the Contractor commencing operations.

Dry Boring & Jacking

The casing pipe shall be spiral welded or smooth wall steel pipe in accordance with ASTM A53, Grade B having minimum yield strength of 35,000 psi. The carrier pipe installed for water or force main applications, within the casing pipe shall be CL 50 ductile iron restrained joint pipe. Use of pressure class ductile iron pipe for water mains is acceptable, in accordance with Specification Section 02660. Mechanical joint restraint systems (i.e., Mega-Lugs, grip-rings, field-lok gaskets, etc.) are not an acceptable means of restraint within the casing pipe for water mains or force mains.

The material for the gravity sanitary sewer carrier pipe shall be CL 50 ductile iron restrained joint pipe. All carrier pipes in sewer service shall have the appropriate lining and coating. Use of restraining gaskets (i.e., field-lok gaskets) is an acceptable means of restraint for gravity sewer mains. Use of mega-lugs (or equivalent) is not approved for restraint within casings.

The casing pipe minimum size and minimum wall thickness shall be in accordance with the following chart unless indicated otherwise on the drawings.

CARRIER PIPE (dia, in inches)	MIN CASING SIZE (inches)	WALL THICKNESS (inches)	RAILROAD WALL THICKNESS (inches)
4	10	0.188	0.188
6	12	0.250	0.281
8	16	0.250	0.281
12	24	0.250	0.375
16	30	0.312	0.469

18	30	0.312	0.469
24	36	0.375	0.532
30	42	0.500	0.625
36	48	0.500	0.688

The Contractor may substitute larger size casing pipe (particularly for sewer mains where grade and alignment are critical) with the proper wall thickness. A manual steering head or other approved guidance system is recommended for casing pipe 30 inches and larger and/or bores exceeding 100 feet in length.

INSTALLATION

Installation using the selected method shall be true to line and grade, where indicated on the plans, all in accordance with these specifications and recommendations of the pipe manufacturer. The Contractor shall notify all affected parties a minimum of seven (7) days prior to any contemplated work.

It is recommended that the Contractor perform each bore before beginning the sewer line construction. The boring shall be performed from the "upstream" to "downstream" direction maintaining the critical downstream invert elevation. Should the bore termination not be on grade, a revised plan shall be submitted to PWC Water Resources Engineering for approval. No additional payment shall be made for any required corrective actions. The boring operations shall be conducted at all times in such a manner so as not to create a hazard to nor impede the flow of traffic.

The Contractor will be responsible for any repair costs if any settlement or damage to the roadway or railroad bed resulting from the boring operation occurs within one year after completion of the work. The Contractor shall maintain proper insurance as required by the permitting agency.

The Contractor shall submit all requested information as required by the permitting agency.

Dry Boring & Jacking

The alignment and grade of the jacking shall be carefully established prior to beginning the operation. A licensed professional land surveyor shall provide staking to establish the correct alignment and grade. The licensed surveyor (or a licensed professional engineer) shall provide cut sheets to the Public Works Commission and the contractor.

Lubricants such as bentonite may be applied to the outside of the pipe to reduce frictional resistance during jacking. The boring auger shall not be a greater diameter than the outside diameter of the encasement and removal of the excavated material ahead of the pipe will be held to a minimum to prevent the formation of voids.

Voids occurring outside the encasement pipe shall be filled with 1:3 Portland cement grout and the ends of the encasement pipe closed with masonry after the carrier pipe placement. The voids shall be filled with 1:3 Portland cement grout at sufficient pressure to prevent settlement of the roadway or railroad. The method of grouting shall be as approved by the permitting agency.

If the installed casing is deemed to be unusable by the Public Works Commission and/or the permitting agency, the casing shall be abandoned by bricking each end and filling the casing with grout, or as directed by the permitting agency.

The Contractor shall locate all existing utilities in the proposed location of the jack and bore. Design of the casing shall be in accordance with PWC standards, and subject to PWC approval. The casing should have a minimum separation of 12-inches from existing utilities.

In the event two parallel casings are being installed, the minimum separation between the outside edges of each casing shall be five (5) feet, or as directed by the permitting agency. In the event of a conflict between this specification and the permitting agency's requirements, the more stringent shall apply.

The use of "back-taps" is not encouraged. The design engineer shall take all necessary steps to determine the location of existing utilities and evaluate the necessity of a back-tap. Should it be necessary to install a back-tap, the top of casing shall be a minimum of 12-inches below the bottom of the pipe to be tapped. All pipe and fittings from the tap location to the carrier pipe shall be restrained joint. Use of mechanical joint restraint systems (i.e., mega-lugs, grip-rings, etc) are allowed in such instances. The Public Works Commission shall review and approve all proposed back-tap locations.

DIVISION 2**SITE WORK****02305 – PIPE BURSTING**GENERAL

The Contractor shall furnish all labor, equipment, materials, and incidentals necessary for the construction of new water and/or sewer mains utilizing pipe-bursting as shown on the Drawings and as specified herein. Pipe-bursting is a method of trenchless pipe installation that generally follows the same alignment as the host pipe, while breaking or splitting the host pipe and pulling in a new pipe. The pipe-bursting operation shall be completed so as not to interfere with or endanger surface activity. The Contractor shall also furnish all survey, including existing conditions, site layout, inspection and record keeping incidental to the pipe bursting operation and pipe installation.

The intent and purpose of these specifications is to require a complete and satisfactory installation in every respect and any defects in material or workmanship shall be cause for the replacement and correction of such defect as directed by the Public Works Commission at no expense to the Public Works Commission.

RELATED SECTIONS

- A. Section 02222 – Excavation, Trenching, and Backfilling for Utility Systems
- B. Section 02272 – Erosion Control – General Provisions
- C. Section 02730 – Sanitary Sewer Systems
- D. Section 02750 – Wastewater Flow Control
- E. Section 02760 – Television Inspection

SUBMITTALS

All submittals shall be provided in accordance with Section 01000 – Special Conditions, Section 01300 – Submittals, and the requirements outlined herein. The Contractor shall submit, in accordance with Section 01300 – Submittals, letters, shop drawings, and product data showing materials of construction, installation equipment, and details of the pipe-bursting operation, to include:

1. Construction Procedures – The Contractor shall submit written descriptions of the construction method(s) and equipment to be used and locations required for equipment and material access.
2. A plan that outlines the proposed sequence of construction, including equipment staging areas, pipe layout areas, location and size of entry/exit pits, lubrication methods and materials (if applicable), provisions for bypass pumping (if necessary), and other items associated with the installation of the main.
3. Details regarding the various component materials, their properties, and installation procedures.
4. A list of equipment to be utilized, to include size and capacity.
5. Method for detecting surface movement
6. Calculations for required bursting capacity and the resulting equipment size for the project
7. Written certification of the Contractor's compliance with the manufacturer's standards for installation and use of the pipe bursting equipment.
8. Certificates of training for all employees directly involved in the supervision or operation of the pipe bursting system. The pipe bursting system manufacturer shall provide verification.
9. Documentation of the pipe-bursting system manufacturer's technical staff's involvement and experience with similar pipe-bursting projects over the past seven (7) years. Submit copies of certifications.
10. CCTV of existing pipelines and lateral location.
11. Bypass pumping plan equipment and appurtenances to be used

No pipe bursting operations shall proceed until all pipe bursting submittals have been reviewed and approved by the Public Works Commission.

PIPE BURSTING

1. Qualifications: The contractor shall be fully experienced in installing HDPE via pipe bursting methods.

Contractors must obtain all licensing required to use the particular technology proposed for this work. Proof of licensing must be provided prior to any pipe bursting taking place. Personnel directly involved with installing the new pipe shall receive training in the proper methods for handling and installing the HDPE pipe. Training shall be performed by qualified representative.

The Contractor shall be experienced with installing HDPE pipe using the pipe bursting method and shall be certified by the particular Pipe Bursting System Manufacturer that the Contractor is a fully trained user of the pipe system.

Contractor shall provide proof to the Engineer of having successfully installed a cumulative footage of replacement sewer by means of pipe bursting equal to or greater than 10,000 linear feet of HDPE pipe using the Pipe Bursting.

QUALITY ASSURANCE

The Contractor is solely responsible for quality assurance during the length of the project. The Contractor shall be responsible for any costs associated with corrective measures required to replace or repair items not meeting the quality standards specified by the Public Works Commission.

EQUIPMENT

The Contractor shall be certified by the pipe bursting system manufacturer as a fully trained user of the pipe bursting system. Operation of the pipe bursting system shall be performed by trained personnel. Such training shall be conducted by a qualified representative of the pipe bursting system manufacturer. The pipe bursting system utilized by the Contractor shall be fully supported by the manufacturer of the system, as described herein.

MANUFACTURER SUPPORT

All pipe bursting systems shall be manufactured by companies currently supporting the equipment with technical staff and resources that can supplement the pipe bursting Contractor's knowledge and experience, and can provide additional technical expertise. Pipe bursting systems no longer supported by the manufacturer shall not be accepted.

The pipe bursting system manufacturer's technical staff shall be present at the project site during the pipe bursting operation periodically and when specifically requested by either the Contractor or Public Works Commission. The technical staff shall be able to confirm proper operation of the pipe bursting equipment, evaluate and assist with resolving problems, and provide additional technical assistance to the Contractor. Technical support provided by the manufacturer shall be at no additional cost to the Public Works Commission,

The pipe bursting system manufacturer's technical staff shall demonstrate that they have continuously (i.e., projects every year) been involved with pipe bursting projects of similar size, material, and complexity during employment with the system manufacturer over the past seven (7) years. Documentation of their involvement and expertise shall be submitted to the Public Works Commission.

WARRANTY

The Contractor shall warrant to the Public Works Commission that the equipment used on this Contract where covered by patents or license agreements is furnished in accordance with such agreements and that the prices included herein cover all applicable royalties and fees in accordance with such license agreements. The Contractor shall defend, indemnify and hold the Public Works Commission harmless from and against any and all costs, loss, damage or expense arising out of or in any way connected with any claim of infringement of patent, trademark or violation of license agreement.

MATERIALS

Product Requirements: Replacement pipe installed by pipe bursting shall be high density polyethylene (HDPE) pipe. The pipe shall be manufactured from a high density, high molecular weight polyethylene resin which conforms to ASTM D1248 and meets the requirements for Type III, Class A, Grade P34, Category 5 and has a Plastic Pipe Institute (PPI) rating of PE 3408 when compounded. The pipe produced shall have a minimum cell classification of 345434D or 345434E under ASTM D3350. The HDPE installed shall be a minimum SDR 17 and shall be capable of supporting the full-bearing load. Contractor shall submit thickness calculations. Sections of HDPE shall be butt-fused in accordance with the HDPE manufacturer's specifications.

Service Connections: Connection of the new service lateral to the mainline shall be accomplished by means of a compression-fit service lateral connection saddle. The service connection shall be specifically designed for connection to the sewer main being installed, and shall be Romac CB Saddle as manufactured by Romac Industries, Inc., Central Plastics Electrofuse Saddle, or approved equal.

INSTALLATION

GENERAL

All work under this Contract shall be performed by skilled workmen experienced in similar installations, with the best current accepted practices of the building trades, and to all applicable codes.

The Contractor shall carry out their operations in strict accordance with all applicable OSHA, local, and state safety standards. Though the installation process may be licensed or proprietary in nature, the Contractor shall not change any material, thickness, design values or procedural matters stated in the submittals, without the prior knowledge and approval of the Public Works Commission. The Contractor shall submit, in writing, full details about component materials, their properties and installation procedures and abide by them fully during the entire course of work.

Pipe and fittings shall at all times be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation **only to the extent approved in writing by the Public Works Commission**. Such materials shall be so placed as to keep obstruction to traffic at a minimum.

PRE-PIPE BURSTING OPERATIONS

Excavation of Service Connections:

Prior to commencing construction, the Contractor shall complete a closed circuit television (CCTV) inspection of the water and/or sewer mains, in order to locate existing service connections. Those active service connections shall be located, excavated and exposed prior to commencing the pipe bursting operation. The Contractor shall exercise due diligence in excavating the existing pipe sufficiently to allow for uniform circumferential expansion of the existing pipe through the service connection pit.

All water and/or sewer service connections attached to the host conduit shall be completely disconnected and isolated from the host conduit before pipe bursting operations commence. Upon commencement of the bursting process, pipe insertion shall be continuous and without interruption from one entry point to another, except as approved by the Public Works Commission. Upon completion of insertion of the new pipe, the Contractor shall expedite the replacement and reconnection of services to minimize any inconvenience to the customers.

Unless specified elsewhere in these Contract Documents, all service connections are to be replaced, from the main to the right-of-way (or easement), in accordance with PWC standards. All service connections and laterals shall be installed in accordance with PWC standard details, specifications, and requirements. All new services and main shall be installed and tested prior to placing into service.

Flow Diversion / Bypass Pumping:

The Contractor, when required, shall provide bypass operations for the flow around the section of pipe designated for replacement. The term "bypass operations" shall include maintaining and controlling flow from individual service connections. The bypass shall be made by plugging the line at an upstream manhole and pumping the flow into a downstream manhole or adjacent sewer facilities. The pump and bypass lines shall be of adequate capacity and size to handle the flow. All bypass operations shall be in accordance with Section 01000 – Special Conditions, Section 02750 – Wastewater Flow Control, and these specifications. Where discrepancies between the specifications exist, the more stringent shall apply.

Since service connections shall be temporarily disconnected from the main line during pipe bursting operations, the Contractor shall provide equipment to handle the flows and dispose of properly to the downstream manhole or adjacent sewer facilities. **Allowing the untreated sewer from the service connections to enter the trench shall not be acceptable.** The Contractor shall maintain sewer service to the customers at all times.

For projects involving the replacement of water mains utilizing pipe bursting, the Contractor shall provide temporary water to the affected customers. Installation, testing, and maintenance of the temporary water system shall be in accordance with these Contract Documents. The temporary water system shall not be placed into service until bacteriological test results or representative water samples analyzed in the Public Works Commission's laboratory are found to be satisfactory. The sterilization and sampling shall be in accordance with Specification Section 02660 – Water Distribution.

Field Verification of Existing Utilities:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE LOCATION AND ELEVATION OF ALL UTILITIES AND STRUCTURES WHICH CROSS THE WORK SITES OR WHICH MAY BE AFFECTED BY HIS OPERATIONS. The Contractor shall excavate to verify exact locations or elevations of utilities or other interference's in order to assure proper protection of existing utilities or structures. No extra payment will be made for such field verification or any excavations or other work or expense incurred by the Contractor in properly locating and protecting utilities or other interference's.

The Work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary connections shall be provided, as required, to insure no interruption of the existing services. Any damage resulting from the work of this Contract shall be promptly repaired by the Contractor at his own expense in a manner approved by the Public Works Commission and further subject to the requirements of any authority having jurisdiction. Where it is required by the authority having jurisdiction that they perform their own repairs or have them done by others, the Contractor shall be responsible for all costs thereof.

PIPE BURSTING OPERATIONS

General:

The pipe bursting tool shall be designed and manufactured to force its way through existing pipe materials by fragmenting or splitting the pipe and compressing the old pipe sections into the surrounding soil as it progresses. The bursting unit shall generate sufficient force to burst and compact the existing pipeline. Selection of tool type and size shall be based manufacturer's specifications and recommendations.

The pipe bursting tool shall be pulled through the existing main by a winch or rod located at the upstream pit. In general, sewer should be pulled from downstream to upstream (i.e., against the flow). The bursting unit shall pull the pipe with it as it moves forward. The bursting head shall incorporate a shield/expander to prevent collapse of the hole ahead of the new pipe insertion. The pipe bursting unit shall be remotely controlled. Replacement pipe that is sectional shall be pushed as well as pulled behind the bursting head.

The bursting action of the tool shall increase the external dimensions sufficiently, causing breakage of the existing pipe at the same time expanding the surrounding ground sufficiently to pull or pull/push in the new pipe.

Pneumatic Pipe Bursting:

The pipe bursting tool shall be designed and manufactured to force its way through existing pipe materials by fragmenting the pipe and compressing the old pipe sections into the surrounding soil as it progresses. The bursting unit shall be pneumatic and shall generate sufficient force to burst and compact the existing pipe line. The Contractor shall follow the manufacturer's specifications to select tool size.

The pipe bursting tool shall be pulled through the sewer by a winch located at the either upstream or downstream manhole. The bursting unit shall pull the pipe with it as it moves forward. The bursting head shall incorporate a shield/expander to prevent collapse of the hole ahead of the pipe insertion. The pipe bursting unit shall be remotely controlled.

The pipe bursting tool shall be pneumatic. The bursting action of the tool shall increase the external dimensions sufficiently, causing breakage of the pipe at the same time expanding the surrounding ground. This action shall not only break the pipe but also create a temporary void into which the bursting tool can be winched and enables forward progress to be made. At the same time the pipe, directly attached to the sleeve on the rear of the bursting tool, shall also move forward.

The bursting tool shall have its own forward momentum while being assisted by winching. A hydraulic winch shall give the bursting tool a force of constant tension so that it can be moved forward. A winch shall be attached to the front of the bursting tool, connecting to or through the advanced guide head technology. The winch shall have twin capstan with twin hydraulic drive motors and twin gear boxes for independent operation. The winch shall be hydraulically operated providing a constant tension throughout the operation. The winch shall be of the constant tension type but shall be fitted with a direct reading load gauge to measure the winching load. The winch must be able to be operated by a remote control if needed. The winch must automatically maintain a constant tension at a set tonnage reading. The constant tension winch shall supply sufficient cable in one continuous length so that the pull may be continuous between approved winching points. The winch, cable and cable drum must be provided with safety cage and supports so that it may be operated safely without injury to persons or property.

The Contractor shall provide a system of guide pulleys and bracing at the exit pit to minimize cable contact with the existing line between launch and exit pits. The supports to the trench shoring in the insertion pit shall remain completely separate from the winch boom support system and shall be so designed that neither the pipe nor the winch cable shall be in contact with them

Static Pipe Bursting:

The pipe bursting tool shall be static and hydraulically operated. The bursting action of the tool shall increase the external dimensions sufficiently, causing pitting and breakage of the pipe at the same time expanding the surrounding ground. This action shall not only break the pipe, but also create the temporary void into which the bursting head can be statically pulled which enables forward progress to be made. Simultaneously, the new pipe, directly attached to the expander, shall also move forward.

The static pulling frame shall be telescopic in design to allow the cutting head to release at the termination of the pull and minimize trench length.

Quick lock bursting rods are required to guarantee snap lock connections and stabilize cutting wheels at a 90° plane to invert pipe. Threaded bursting rods are not allowed.

The unit must maintain automatic thrust and pull back and be capable of pipe bursting in two directions from the same excavation

Pit Locations:

The locations of the pits necessary to complete the pipe-bursting operation, to include pits for machines and/or insertion of the new pipe, shall be centered over the existing water or sewer main. It is the expectation of the Public Works Commission that pits for sewer pipe bursting will be where existing manholes are located. The number of pits, their size, and their location shall be kept to the minimum necessary, as provided in the Contractor's proposed layout plan (refer to the Submittals section of this Specification). Pits shall be excavated at each end of the lines to be replaced (i.e., limits of bursting), unless otherwise approved by the Public Works Commission.

The Contractor shall comply with all applicable OSHA requirements for the installation, shoring, and bracing of the pits. Safety and compliance is the sole responsibility of the Contractor.

Where manholes are used as machine or new pipe insertion pits, the Contractor shall remove and replace such manholes, as indicated on the Contract Drawings and in accordance with these Contract Documents. If the pipe bursting tool and new pipe is planned to traverse the manhole without interruption during the operation, sewer pipe entrances and exits to manholes shall be modified to the appropriate dimensions to prevent damage to the manhole(s). All required modifications to the invert shall be in accordance with PWC requirements.

The pits shall be of sufficient length to complete the pipe bursting. Launch pits shall be long enough to properly align the bursting tool and associated equipment with the existing pipe. For those installations with a continuous "string" of pipe, the launch pit shall be sufficiently long to allow the continuous pipe enough space to bend out of the pit and transition to a "tail ditch" at grade above. The bending of the pipe shall be within the manufacturer's recommended radius. For those installations utilizing the "cartridge" style of connecting the pipe (RJDI), the launch pit shall be sufficiently long to allow for the installation of each subsequent joint of pipe, plus working space. Receiving pits shall be long enough to remove the bursting tool/expander combination while leaving a minimum of five (5) feet of the continuous pipe to work with.

All open excavations shall be kept secure at all times by the use of barricades with appropriate lights and signs, construction tape, covering with steel plates, etc., or as directed by the PWC Project Engineer.

Pits shall be kept as dry as possible and shall be excavated to at least one foot below the pipe invert to minimize the potential for contamination during disconnection and reconnection.

Control of Groundwater:

The Contractor shall furnish all machinery for pumping, bailing, and/or well pointing and shall pump, bail, or otherwise remove any water which may be found or shall accumulate in the pits, and shall perform all work necessary to keep them clear of water while the pipe is being installed. The disposal of water after removal shall be as approved by the Public Works Commission. All required erosion and sediment control measures shall be installed and maintained during discharge of ground water.

Unsuitable Material:

When required by the Public Works Commission, the Contractor shall dispose of material excavated from the pit that is unsuitable for backfill material. The Contractor shall provide and place select borrow material to replace unsuitable material for backfilling the pit as directed for the unit prices stated in the contract.

Pits shall be backfilled in accordance with the appropriate specifications.

PIPE BURSTING SANITARY SEWER

Manhole Preparation:

For those manholes that are to remain, as indicated on the Contract Drawings, the openings shall be enlarged to a sufficient size to allow the bursting head to pass, without damaging the manhole. The openings on pre-cast manholes shall be core drilled. All openings and pipe penetrations shall be sealed in accordance with PWC requirements.

Inside drop connections that interfere with the bursting process shall be removed prior to the bursting operation commencing. Upon completion, a new interior drop structure shall be installed, in accordance with PWC requirements.

Pipe Installation:

The Contractor shall install all pulleys, rollers, bumpers, alignment control devices and other equipment required to protect existing manholes, and to protect the pipe from damage during installation. The winch line is to be centered in the pipe to be burst with an adjustable boom.

Lubrication may be used as recommended by the manufacturer. The Contractor shall match lubricants to soil and insertion conditions.

For RJDI pipe, the terminal sections of pipe that are joined within the insertion pit shall be connected utilizing the factory installed restraint mechanism. If that is not possible, due to the configuration of the pipe, then a mechanical joint sleeve shall be utilized. The sleeve and pipe shall be restrained utilizing mega-lugs or approved equal. Use of grip-rings or similar products are not allowed for this connection.

Connections to Manholes:

At the termination point of the new pipe at the manhole connection, each connection shall be sealed and structurally grouted in place. A flexible rubber "boot" shall be utilized for all connections to manholes, unless otherwise approved by the Public Works Commission. The boot shall be in accordance with PWC requirements. The existing

manhole connection opening shall be sufficient in size to accommodate the new host pipe so that the correct invert elevation meets the existing elevation. The new host pipe shall be sealed to create a water tight seal at the connection. Hydraulic cement is used to seal the complete connection to the existing manhole. This hydraulic cement shall be applied to the exterior of the existing manhole as well as the interior of the manhole at the pipe connection.

Sealing and Benching in Existing Manhole:

When the replacement pipe terminates at an existing manhole, the top half of the pipe within the existing manhole shall protrude into the manhole a minimum of three (3) inches for RJDI and shall be neatly cut off and not broken or sheared off. The channel in the manhole shall be a smooth continuation of the pipe(s) and shall be merged with other lines or channels, if any. Benches and channel cross section shall be reconstructed in accordance with PWC requirements.

Service Connections:

Sewer: All sewer service connections shall be identified and located prior to pipe bursting operation. After the required relaxation period (as applicable), the Contractor shall reconnect all service connections, in accordance with Public Works Commission requirements. Service reconnections shall be as follows:

Install a saddle for all service connections unless otherwise indicated. All fittings and connections shall be in accordance with Specification 02730 – Sanitary Sewer.

RESTORATION

All backfill shall be in accordance with Specification Section 02222 – Excavation, Trenching, and Backfilling for Utility Systems, and the requirements outlined in these Contract Documents. All trenches and excavations shall be compacted in accordance with these Contract Documents.

Prior to backfilling lateral and launching pits, the Contractor shall ensure that the new pipe and service connections are properly supported and on the correct line and grade. Stone or other suitable material, as approved by the Public Works Commission, shall be utilized under the new pipe to provide support and prevent sagging after backfill and compaction.

All work areas and rights-of-way shall be cleaned up, properly graded and vegetated, free of debris, and left in condition satisfactory to the Public Works Commission.

POST INSTALLATION CCTV INSPECTION

The Contractor shall perform post installation internal television inspections to verify that the installation is acceptable as defined herein. Each segment of sewer shall have audio description with appropriate stationing of services indicated. The finished DVD shall be continuous over the entire length of the sewer between two manholes or as specified by the Public Works Commission. The data and stationing are to be on the video. All such inspections shall be performed by personnel trained in locating breaks, obstacles and service connections by closed circuit color television. All original DVDs remain property of the Public Works Commission.

The CCTV inspection shall be performed after all work is completed, including, but not limited to: installation of all service connections, and completion of all manhole rehabilitation. The Public Works Commission may, at its option, conduct an inspection of the new pipe to determine its condition subsequent to the pipe burst, prior to all work being completed. Any defects, which, in the opinion of the Public Works Commission affect the integrity of the pipe shall be replaced or repaired by the Contractor at no additional cost to the Public Works Commission. All repairs shall be submitted to the Public Works Commission for review and approval prior to commencing any repair work.

The post-rehabilitation CCTV inspections shall be performed from manhole to manhole and shall be such that the inner pipe can be clearly seen (not too much or too little light). Pipelines shall be thoroughly cleaned prior to performing the television inspections so that the entire pipe, including the bottom, can be clearly seen. All connections shall be clearly shown. The camera shall be panned, tilted and rotated at all defects and at the service lateral or pressure main connections for a complete video documentation.

The CCTV inspection shall include video documentation and computer generated logs to document the inspection. The final footage of the post-rehabilitation inspection shall be within 1% of the actual pipeline length as measured above ground.

The Contractor shall submit a sample CCTV inspection after the first installation so that the Contractor and the Public Works Commission can agree on the performance and quality of the inspections which must be met throughout the Contract. Pipelines not inspected to the Public Works Commission's satisfaction shall be re-inspected by the Contractor at no additional cost to the Public Works Commission.

One (1) copy of the DVDs and logs shall be submitted to the Public Works Commission for review and approval. Payment will not be made for any pipe bursting until the Public Works Commission has reviewed and approved these videos. The Contractor shall submit the videos at least 10 days in advance of any payment request to provide the Public Works Commission ample time to review the videos.

TESTING

All testing shall be in accordance with the applicable Specification Section governing water and/or sewer. All testing shall be satisfactorily completed prior to placing the system into service. All mains and laterals shall be tested.

ACCEPTANCE

Acceptance of the installed mains and laterals shall be based on conformance with the requirements herein, the Public Works Commission's review of all required construction submittals (as-builts, logs, CCTV inspection, etc.) and results of all testing.

*** END OF SECTION ***

DIVISION 2
SITE WORK

02573 PERMANENT PAVEMENT PATCH

GENERAL

Permanent pavement patching shall be completed as indicated on the Contract Plans and in accordance with these Contract Documents. The intent and purpose of these specifications is to require a complete and satisfactory installation in every respect and any defect in material or workmanship shall be cause for replacement and correction of such defect as directed by the Public Works Commission. All materials and workmanship shall be in complete accordance with the standards and specifications of the Public Works Commission and subject to Public Works Commission inspection and approval. The materials and installation shall conform to the North Carolina Department of Transportation (NCDOT) Standards, (latest revision), the NCDOT HMA/QMS Manual (latest revision), and as specified herein.

REMOVAL

The Contractor shall cut the existing pavement to straight uniform widths parallel and perpendicular to the roadway. Jagged saw cuts will not be acceptable. The pavement shall be removed its entire depth. The Contractor shall properly dispose of all removed pavement. If the Contractor elects to mill the asphalt, the millings cannot exceed two (2) inches in size, and shall be swept into the trench and re-compacted. The removal limits shall extend a minimum of six (6) inches into solid undisturbed base course prior to patching or as directed by the Public Works Commission.

Pavement removal shall not exceed 3,000 feet total for the entire project at one time. It shall be the Contractor's responsibility to maintain the trench (swept, wetted, compacted, etc.) until paved.

PAVEMENT

Replacing the pavement shall consist of the following:

Tack Coat

All existing pavement edges shall be tacked in accordance with the North Carolina Department of Transportation Standard Specifications for Roads and Structures (latest revision).

Asphalt Surface Course

The asphalt surface course shall be Type S9.5, placed in accordance with the PWC Standard Detail M.2. All asphalt surface course shall be in accordance with the NCDOT HMA/QMS Manual (latest revision) and the North Carolina Department of Transportation Standard Specifications for Roads and Structures (latest revision).

The pavement repair shall be constructed to the line, grade, crown and cross section of the existing street. The asphalt plant mix shall be compacted to density in accordance with the HMA/QMS Manual (latest revision). The Contractor shall provide a smooth transition from the existing pavement to the top of the backfill, so as to have no vertical drop (in any direction). The transitions shall only be removed the day of patch paving.

The permanent pavement patch shall be made within 30 days of installation of the line. If settlement should occur within one (1) year warranty period, the Contractor shall be required to remove asphalt, re-compact base and sub-base, and re-patch any areas of settlement at no expense to PWC. All repairs shall be in accordance with these Contract Documents.

Base Course

The base course shall be aggregate base course (ABC) installed to a minimum eight (8) inches thickness (compacted) and extending a minimum of six (6) inches beyond the edge of the trench as indicated on the PWC Standard Detail M.2. The base course shall be compacted to 100% maximum dry density at optimum moisture content as determined by the AASHTO T-99 as modified by NCDOT.

The Contractor, with permission of the Public Works Commission, may use asphalt concrete intermediate course, placed in a minimum four (4) inch layer extending a minimum of six (6) inches beyond the edge of the trench as indicated on the Permanent Patch Detail. The Asphalt Concrete Intermediate Course shall be in accordance with the North Carolina Department of Transportation Standard Specifications (latest revision), and the NCDOT HMA/QMS Manual (latest revision).

Prior to patch paving, the Contractor shall remove the upper ten (10) inches of backfill, if ABC is to be used or upper six (6) inches if Asphalt Concrete Intermediate Course is to be used, in the trench. All asphalt edges along the trench shall be cut straight, uniform width, parallel and perpendicular to the road with no jagged edges. The outer six (6) inches (minimum) of the trench adjacent to the newly removed asphalt shall be on undisturbed soil.

The pavement repair shall be constructed to the line, grade, crown and cross section of the existing

street. The asphalt plant mix shall be compacted to density in accordance with the HMA/QMS Manual.

Maintenance shall be performed at least weekly, after a rainfall, or at the direction of the Public Works Commission. Maintenance shall include sweeping the adjoining pavement, blading, wetting and compacting the stone to insure smooth drivable surface.

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**DIVISION 2
SITE WORK**

02730 SANITARY SEWER SYSTEMS

GENERAL

Sanitary sewer lines and all appurtenant items shall be constructed of materials specified or indicated on the drawings. The intent and purpose of these specifications is to require a complete and satisfactory installation in every respect and any defect in material or workmanship shall be cause for the replacement and correction of such defect as directed by the Public Works Commission.

RELATED SECTIONS

- A. 02211 – Grading, Utilities
- B. 02222 – Excavation and Backfilling for Utility Systems
- C. 02732 – Sewage Force Mains

MATERIALS

SEWER MAINS

Prior to shipment each joint of pipe shall be stamped by an independent testing laboratory, certifying compliance with the specifications stated therein. Pipe sizes indicated shall be understood to be nominal inside diameter of the pipe. All sewer pipe materials shall be either PVC (as specified herein) or ductile iron (as specified herein), unless otherwise approved in writing by the Public Works Commission. Written approval shall be obtained prior to installation.

DUCTILE IRON PIPE

All ductile iron pipe and fittings shall be in strict accordance with ANSI A21.51 and AWWA C151, Class 50 or Class 51, as applicable, in every respect. The working pressure shall be a minimum of 200 psi. Pipe shall be furnished in 18 or 20-foot lengths. All pipe joints used in open trench construction shall be furnished with "push-on" joints, unless otherwise indicated on the drawings or specified. All joints and fittings shall be in accordance with ANSI A21.11 and AWWA C111. All ductile iron interior surfaces shall be lined with two (2) coats of ceramic epoxy to produce a total minimum dry film thickness of 40 mils (Protecto401 or approved equal). The exterior pipe surfaces shall be protected with asphaltic coating as specified in AWWA C151 and C110. Specifications for the ceramic epoxy can be found in Specification Section 09802.

For aerial crossings which are 4 inches through 12 inches in diameter, manufactured restrained joint ductile iron pipe Class 53, or Class 53 flanged ductile iron pipe shall be utilized in accordance with the standard Public Works Commission detail for aerial crossings. Mega-lugs, field-lok, and gripper rings are

not an allowable means of restraint for aerial crossings. For aerial crossings larger than 12 inches, or as noted specifically on the plans, flange joint ductile iron pipe, Class 53, shall be utilized in accordance with the standard Public Works Commission details. The location of flanges shall be specifically designed for each application. The flange pipe shall be in accordance with ANSI/AWWA C-115/A21.15. Threads for threaded flange pipe shall be in accordance with ANSI B2.1, shop fabricated as outlined by AWWA 115 with serrated faces furnished on the pipe, completely factory installed. Welding of flanges to the body of the pipe will not be acceptable. Ductile iron fittings and flanges shall be in accordance with ANSI/AWWA C-110/A21.10 with a minimum working pressure of 250 psi. Gaskets shall be full faced SBR rubber per ANSI/AWWA C-111/A21.11 with a minimum 1/8" thickness. Linings and coatings shall be as outlined for ductile iron pipe.

If the Public Works Commission determines that an expansion coupling is required, it shall be installed as indicated on the drawings. The expansion coupling shall not be buried.

For subsurface water crossings (i.e., streams, wetlands), restrained joint ductile iron pipe shall be utilized. No mechanical restraint systems (e.g., mega-lugs, field-lok gaskets, etc.) shall be utilized. The pipe shall be installed in a casing, in accordance with the approved Public Works Commission detail, unless otherwise specifically approved by the Public Works Commission.

PVC PIPE

PVC sewer pipe and fittings 4 inches thru 15 inches shall be in accordance with ASTM D-3034 with a standard dimension ratio (SDR) of 26 for sewer mains and laterals. Larger diameter pipe (18 inches through 27 inches) shall be in accordance with ASTM F-679, with a SDR of 26. Both pipe and fittings shall be made of PVC plastic having a cell classification of 12454 as specified in ASTM D-1784.

Pipe joining shall be push on elastomeric gasket joints only and the joints shall be manufactured and assembled in accordance with ASTM D-3212. Elastomeric seals shall meet the requirements of ASTM F-477. The pipe shall be furnished with integral bells and with gaskets that are permanently installed at the factory and in accordance with ASTM D-3212 and contain a steel reinforcing ring. PVC sewer pipe shall be made by continuous extrusion of prime green unplasticized PVC and contain identification markings as required by the applicable ASTM standard.

SEWER FITTINGS

Ductile Iron Push-on Fittings:

Ductile iron sewer fittings on PVC mains shall be deep bell, gasketed joint, and air test rated. Gasket grooves shall be machined in the factory. Material shall be ductile iron, in accordance with ASTM A536, Grade 65-45-12 and ASTM F1336. Wall thickness shall meet the requirements of AWWA C153. Gaskets shall have a minimum cross sectional area of 0.20 square inches, and conform to ASTM F477. All ductile iron fittings shall have an interior coating of Protecto 401, or approved equal. All ductile iron fittings on PVC pipe shall provide a flow line that provides a smooth transition between the materials. Ductile iron fittings shall be as manufactured by the Harrington Corporation (Harco), or approved equal.

Mechanical Joint Fittings:

Joints shall be installed in accordance with AWWA C-600 and shall conform to AWWA Standard C-111. Mechanical joints shall be of the stuffing box type and shall conform to ANSI A21.11 for four inch (4") pipe and larger. Fittings and specials shall be ductile iron and shall be manufactured in accordance with AWWA Standard C-110 (ANSI A21.11). Compact fittings shall be ductile iron in accordance with ANSI A 21.53 (AWWA C-153) for 4" thru 24" sizes only. Note: mechanical joint wyes are not included in the AWWA C-153 specification. Pressure rating shall be not less than 200 psi unless otherwise specified. All ductile iron fittings shall have an interior coating of Protecto 401, or approved equal. Mechanical joint fittings shall be utilized on ductile iron mains and ductile iron laterals. Mechanical joint fittings shall not be utilized on PVC mains, unless otherwise approved by the Public Works Commission.

PVC Fittings:

PVC fittings shall be manufactured in accordance with ASTM D-3034, F-1336, and F-679. Molded fittings shall be utilized in sizes from 4" to 8" (or larger, if available). Fabricated fittings shall only be utilized with prior approval from the Public Works Commission. Fabricated fittings are defined as those fittings that are made from pipe or a combination of pipe and molded components. All PVC fittings shall contain identification markings as required by the applicable ASTM standard. All PVC fittings shall be gasketed joint, except as indicated for interior drop structures. Plastic fittings shall be as manufactured by GPK Products, Inc., Plasti-Trends, the Harrington Corporation (Harco), or approved equal.

Ductile Iron Pipe Size x SDR26 Transition Adapter:

All ductile iron x PVC transition adapters shall be one (1) piece, bell x bell (gasket x gasket). Transition adapters shall range in size from four (4) inches through 12 inches. Transition adapters for pipe larger than 12-inches shall be as specified by the Public Works Commission. All transition adapters shall have a flow way tapered to allow a smooth transition between the ductile iron and PVC. Transition adapters shall be either PVC or ductile iron, in accordance with the following:

PVC – All PVC transition fittings shall be made from DR 18 C900 pipe stock. The C900 pipe stock shall meet the requirements of AWWA C900/C905, and have a minimum cell classification of 12454 as defined in ASTM D1784. The wall thickness shall meet or exceed DR 18. PVC transition fittings shall have SBR gaskets in accordance with ASTM F477. All six (6) inch and eight (8) inch adapters shall be molded. Molded fitting joints shall be 235 psi rated, in accordance with ASTM D3139, and shall have SBR rubber gaskets. Four (4) inch, ten (10) inch and 12 inch transition adapters shall have SBR Rieber style gaskets meeting ASTM F477. Joints shall be 235 psi rated, in accordance with ASTM D3139 for the C900 (ductile iron) bell, and in accordance with ASTM D3212 for the sewer (SRD26) bell. Molded C900 bell depths shall comply with AWWA C907. Fabricated (4-inch, 10-inch and 12-inch) bell depths and molded sewer (SDR26) bell depths shall be in accordance with ASTM F1336. PVC transition adapters shall be manufactured by the Harrington Corporation (Harco), GPK Products, or approved equal.

Ductile iron – Ductile iron transition fittings shall be deep bell, push-on joint, and air test rated. The ductile iron material shall comply with ASTM A536, Grade 65-45-12 or 80-55-06. The bell depth shall be in accordance with ASTM F1336. Gaskets shall be of SBR rubber, in accordance with ASTM F477. Transition gaskets are not allowed. All ductile iron transition fittings shall have an interior coating of Protecto401 or approved equal. Ductile iron transition fittings shall be manufactured by the Harrington Corporation (Harco) or approved equal.

Saddles:

Sewer service saddles may be utilized for sewer lateral installations. All sewer service saddles shall be ductile iron with stainless steel straps, bolts, nuts, and washers. The nuts shall be coated to prevent galling. The saddle body shall be ductile iron, in accordance with ASTM A536, Grade 65-45-12. The gasket material shall be SBR, in accordance with ASTM D2000. Saddles for PVC or DI laterals shall have an alignment flange. Sewer service saddles shall be as manufactured by Geneco, or approved equal. All stainless steel straps shall be pre-formed at the factory, to the specified outside diameters of the pipe.

SEWER LATERALS

Ductile iron laterals – For ductile iron mains, utilize mechanical joint fittings or an approved saddle with an alignment flange (Geneco or approved equal). For PVC mains, utilize an approved saddle with an alignment flange (Geneco or approved equal) or ductile iron fittings as specified above.

PVC laterals – utilize a saddle with an alignment flange (Geneco or approved equal) on PVC or ductile iron mains; utilize a mechanical joint tee with SDR 35 transition gaskets on ductile iron mains; or utilize PVC fittings as specified above on PVC mains.

The following table summarizes the materials to be utilized for sewer main to lateral connections:

	PVC Main	DI Main
DI Lateral	DI fitting or approved saddle	MJ fitting or approved saddle
PVC Lateral	PVC fitting or approved saddle	MJ fitting with transition gasket or approved saddle

Sewer laterals shall be in accordance with these Specifications and PWC standard details S.10, S.11, and S.12.

PRECAST CONCRETE MANHOLES

Pre-cast circular reinforced concrete manhole units shall be in accordance with ASTM C-478. The tongue and groove ends of the manhole sections shall be manufactured for jointing with rubber gaskets (i.e., con-seal). An eccentric cone shall be utilized on all manholes, unless otherwise approved by the Public Works Commission.

Manhole steps shall be placed in all manholes and shall be steel reinforced (½" grade 60) copolymer polypropylene plastic steps in accordance with ASTM C-478 for material and design. The steps shall be spaced 16" on center with serrated treads and wide enough to stand on with both feet.

Manhole frames and covers shall be made of gray cast-iron, and the iron shall possess a tensile strength of not less than 18,000 psi. Cast iron shall conform to ASTM Specification A 48-83 Class 35. The frame and cover shall be manufactured by the same manufacturer. All castings shall be in accordance with Public Works Commission standard details. Any defective castings shall be removed and replaced.

Any special linings and coatings that are specified for a manhole and installed at the production facility, in the field, or during repairs, shall be applied in accordance with the applicable special coatings specification and the manufacturer's specifications for that material.

Camlock ring and covers shall be in accordance with Public Works Commission standard details. Camlock bolt head shall be compatible with PWC standard tool for turning camlock mechanism. Camlock ring and covers shall be installed as indicated on the drawings, in accordance with PWC standard details.

SELECT BEDDING MATERIAL

Select bedding material shall be crushed stone (No. 57 or No. 5), in accordance with Public Works Commission standard details. Bedding material shall be provided for all pipe materials.

INSTALLATION

Pipe installation shall be in strict accordance with Specification Section 02222 – Excavation and Backfilling for Utility Systems and as outlined herein.

PIPE LAYING

Pipe installation shall be in accordance with the manufacturer's instructions. Proper equipment shall be utilized to perform the work in a manner satisfactory to PWC. All pipes and fittings shall be carefully lowered into the trench in such a manner to prevent damage to the protective coatings and linings. Under no circumstances shall pipe materials be dropped or dumped into the trench. Pipe shall be carried into position and not dragged.

All dust, dirt, oil, tar (other than standard coating), or other foreign matter shall be cleaned from the jointing surfaces, and the gasket, bell, and spigot shall be lubricated with lubricant recommended by the manufacturer.

The pipe shall be laid upgrade, beginning at the lower end with the tongue or spigot ends pointing in the direction of the flow to the correct line and grade, unless otherwise approved by PWC. The pipe section to be installed shall be aligned by batter board or laser beam with the last installed pipe section. Mechanical equipment should not be used to assemble the pipe. Pipe shall be assembled in accordance with the pipe

manufacturer's instructions. Any damage resulting from the use of mechanical equipment shall be replaced as directed by PWC.

Adjustments in grade by exerting force on the barrel of the pipe with excavating equipment shall not be allowed. The Contractor shall verify line and grade after assembling each joint.

At any time when pipe laying is not in progress, the open ends of the pipe shall be closed by a water tight plug or other means approved by the PWC Project Coordinator. If water is in the trench, the plug shall remain in place until the trench is pumped completely dry. No pipe shall be laid in water or where in the PWC Project Engineer's and/or PWC Project Coordinator's opinion trench conditions are unsuitable. Every precaution shall be taken to prevent material from entering the pipe while it is being installed.

ALIGNMENT AND GRADE

All pipe shall be installed to the required lines and grades. Structures shall be installed at the required locations. The lines and grades of the pipe will generally be indicated by stakes parallel to the line of the pipe. The Contractor shall be responsible for installing the pipe to proper line and grade.

Pipe shall be visually inspected by shining a light between structures and /or by closed circuit television inspection. Any defects discovered, including poor alignment, shall be corrected as directed by the Public Works Commission.

The bottom of the trench shall be excavated to a minimum of four inches (4") below the outside bottom of the pipe being installed to allow adequate placement and compaction of bedding material prior to installation.

Select bedding material shall be placed a minimum of four inches (4") and a maximum of six inches (6") under the pipe for full width of the trench and halfway up the pipe on the sides. Bedding material shall be placed in layers not exceeding six inches (6") loose thickness for compacting by vibratory mechanical tamps under the haunches and concurrently on each side of the pipe for the full width of the trench. The final result shall be "Class B" bedding for rigid pipe. If the existing material under the pipe bedding material is unsuitable, the unsuitable material shall be removed and replaced with select bedding material (No. 57 or No. 5 stone), as authorized and approved by the Public Works Commission Project Coordinator.

The same material pipe shall be utilized from manhole to manhole, unless otherwise approved by PWC. If the section of pipe between manholes is 250 feet or less, no transitions will be allowed (either all PVC or all ductile iron). Should the length between manholes exceed 250 feet, only one transition will be allowed. Use of a C900 x SDR 26 adaptor shall be used to accomplish the transition. A transition is defined as the use of one C900 x SDR26 adaptor. No more than one (1) adaptor shall be utilized in any given manhole to manhole segment.

All manholes shall be constructed to Public Works Commission's standards. Installation shall be in accordance with ASTM C-891 and PWC standards.

Manholes shall be constructed of precast reinforced concrete circular sections installed on a base riser section with integral floor and shall be cored to accommodate the various pipe connections, as indicated on the drawings. Pipe connections to a manhole shall be by gasketed flexible watertight connections (boot for small diameter and A Loc for larger diameter pipe) or as approved by the Public Works Commission. The manhole size shall be in accordance with the following table, unless otherwise specified:

<u>Pipe Size</u>	<u>Manhole Diameter **</u>
24" and less	48" *
27" - 36"	60"
42"	72"

* Where interior drop structures are required, use 60" diameter as required in the Public Works Commission standard details.

** Where multiple connections or acute angles are required, larger diameter manhole may be required as indicated on the plans.

The invert channel shall be constructed of brick and mortar, in accordance with Public Works Commission standard details. **Precast inverts are not allowed.** The invert channel shall be smooth and semicircular in shape conforming to the inside of the connecting sewer section. Changes in direction of flow shall be made with a smooth curve as large as a radius as the size of the manhole will permit without a decrease in flow velocity. Changes in size and grade of the channel shall be made gradually and evenly. The invert channel walls shall be constructed to three quarters (3/4) of the height of the crown of the outlet sewer and in such a manner not to obstruct maintenance, inspection or flow in the sewers. The inverts shall have a minimum slope of one (1) percent across the bottom of the manhole. A shelf shall be provided on each side of any manhole invert channel. Inverts in manholes with standing water will not be acceptable. The shelf shall be sloped not less than 1:12 (min) and no more than 2:12 (max). The bottom of the boot for the new sewer main or lateral shall be set one inch above existing shelf unless otherwise indicated.

When used in a paved street, the ring and cover shall be set in suitable mortar surrounded by a concrete collar in accordance with Public Works Commission standard details. When used in places other than in a paved street, the ring and cover shall be set to the grade shown on the plans or directed by the Public Works Commission. In unpaved areas cam-lock ring and cover shall be used. Camlock ring and cover shall be installed in accordance with Public Works Commission standard details.

The interior manhole riser joints, lift holes and grade adjustment rings shall be sealed with non-shrinking mortar to provide a watertight manhole. Lift holes sealed by the manufacturer with plastic caps do not require mortar seal. The hardened mortar shall be smooth to rub with no sharp edges. Use of grade rings with cam-lock ring and cover are not allowed, unless approved by the PWC Project Coordinator. **Use of grade rings is not allowed for above grade adjustments.**

All exterior manhole riser joints, including the joint at the cone, shall be sealed with an external rubber sleeve. The sleeve shall be made of stretchable, self-shrinking rubber, with a minimum thickness of 30 mils. The back side of each wrap shall be coated with a cross-linked reinforced butyl adhesive. The butyl

adhesive shall be a non-hardening sealant, with a minimum thickness of 30 mils. The seal shall be designed to stretch around the manhole joint and then overlap to create a fused bond between the rubber and butyl adhesive. The application shall form a continuous rubber seal for the life of the application. The sealing system shall be as manufactured by Concrete Sealants, Inc. (Con-Seal), Sealing Systems, Inc., or approved equal. The wrap shall be a minimum of six (6) inches in width, and shall be centered on the joint. All manhole joints (including the cone section to the last riser) shall be wrapped and sealed. Care shall be taken to prevent damage to the wrap during backfill operations. The manhole surface shall be prepared in accordance with manufacturer's specifications, prior to installing the joint wrap.

Materials shall not enter the sewer line during construction of the manhole. The manhole shall be kept clean of any and all debris or materials. Any debris or material that entered the manhole shall be immediately removed. This condition shall be maintained until final acceptance of the work.

CONNECTION TO EXISTING MANHOLES OR LIFT STATIONS

All connections to existing manholes and/or lift stations shall be approved by the Public Works Commission. Where new mains are to be connected to existing active sanitary sewers, the active sewers shall remain in service. Unless otherwise indicated, where new lines are connected into existing manholes, all or such portion of the manhole invert as is necessary shall be removed and a new invert shall be constructed to accommodate both new and existing flows. All work shall conform to the requirements specified for new manholes. The existing structure connection shall be cored and a flexible watertight connection (i.e., boot) installed. The boot shall be installed in accordance with Public Works Commission standard details and requirements. The Contractor shall coordinate and cooperate with the Public Works Commission's Project Coordinator.

PIPE TO MANHOLE CONNECTOR (BOOT)

A watertight, flexible pipe-to-manhole connector shall be utilized on all pipe to manhole connections, for both new and existing manholes and pipes, unless otherwise specifically authorized in writing by the Public Works Commission.

The connector assembly shall be the sole element to provide a watertight seal of the pipe to the manhole or other structure. The connector shall consist of a rubber gasket, an internal compression sleeve, and one or more external take-up clamps. The connector shall consist of natural or synthetic rubber and Series 300 non-magnetic stainless steel. No plastic components shall be allowed.

The rubber gasket shall be constructed of synthetic or natural rubber, and shall meet or exceed the requirements of ASTM C-923. The connector shall have a minimum tensile strength of 1,600 psi. The minimum cross-sectional thickness shall be 0.275 inches.

The internal expansion sleeve shall be comprised of Series 300 non-magnetic stainless steel. No welds shall be utilized in its construction.

Installation of the connector shall be performed utilizing a calibrated installation tool furnished by the connector manufacturer. Installation shall require no re-tightening after the initial installation. Installation shall be done in accordance with the manufacturer's instructions.

The external compression take-up clamps shall be Series 300 non-magnetic stainless steel. No welds shall be utilized in its construction. The clamps shall be installed utilizing a torque-setting wrench furnished by the connector manufacturer. Installation shall be done in accordance with the manufacturer's instructions.

The Contractor shall utilize the proper size connector in accordance with the connector manufacturer's recommendations. All dead-end pipe stubs shall be restrained in accordance with ASTM C-923.

The finished connection shall provide a sealing to a minimum of 13 psi, and shall accommodate a minimum pipe deflection of seven (7) degrees without the loss of seal.

The pipe to manhole connector shall be PSX: Direct Drive as manufactured by Press-Seal, or approved equal.

INSIDE DROP MANHOLE STRUCTURE

Inside manhole drop structures shall be constructed and installed in accordance with Public Works Commission standard details.

CLEANING

Prior to final inspection, all sanitary sewer laterals, mains, and manholes newly installed on the collection system shall be flushed and cleaned. During the flushing operation, the downstream manhole shall be closed with a watertight plug to protect the existing sewer main. All water and debris shall be removed and properly disposed of by the Contractor. This condition shall be maintained until the Public Works Commission issues final acceptance for the project.

TESTING

Completed sewers shall be tested in accordance with the provisions outlined below. The Contractor shall furnish all equipment, labor, materials, and pay all costs associated with the tests performed. The Contractor shall schedule all testing with the Public Works Commission's Project Coordinator, a minimum of 48 hours in advance. The Contractor shall cooperate with the Public Works Commission's Project Coordinator and furnish any needed assistance necessary to complete the required testing.

For annexation and/or retrofit projects: No testing shall be conducted prior to successful completion of the compaction testing.

For all other projects: No testing shall be completed until all utilities are installed, prior to preparation of the road subgrade. The Contractor may elect to perform testing to satisfy them that the sewer utility is installed properly prior to commencing installation of other utilities. However, such testing shall not be construed as acceptance by PWC.

The deflection/mandrel test shall not be performed until a minimum of thirty (30) calendar days after backfill operations are completed and the area graded to final contours. In lieu of waiting thirty (30) calendar days, the Contractor has the option to have an independent testing laboratory verify that compaction has been completed to achieve the maximum density as shown in the detail. The location and elevation of the compaction testing shall be determined reviewed and approved by the Public Works Commission's Project Coordinator. The Contractor shall provide the Public Works Commission with a copy of the density testing results.

Compaction testing shall be done in accordance with Specification Section 02222 – Excavation and Backfilling for Utility Systems.

Vacuum Testing Manholes:

All precast sanitary sewer manholes installed by the Contractor shall be vacuum tested for leakage. This test shall be done in accordance with ASTM C-1244 and in the presence of a Public Works Commission Project Coordinator. The Contractor shall be responsible for providing all the necessary labor, materials, equipment, testing apparatus, and all other incidentals necessary to complete the vacuum test. All testing equipment utilized shall be approved for use in vacuum testing manholes.

Each manhole shall be tested after assembly. All lift holes shall be plugged with an approved non-shrink grout. All lines, including laterals, entering the manhole shall be temporarily plugged. The Contractor should take care to ensure that the pipes and plugs are secure in place to prevent them being drawn into the manhole. The test head shall be placed directly on top of the concrete surface of the manhole following the manufacturer's recommendations, rather than to the cast iron seating ring.

Manholes may be tested either prior to backfill or post backfill at the contractor's option. For pre-backfill testing, a vacuum of 10 inches of Mercury (inches Hg) shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off. The time shall be measured for the vacuum to drop to 9 inches of Mercury (inches Hg). The manhole is acceptable if the time for the vacuum reading to drop from 10 inches of Mercury to 9 inches of Mercury meets or exceeds the values indicated below:

<u>Manhole Depth</u>	Diameter of Manhole		
	<u>4' Diameter</u>	<u>5' Diameter</u>	<u>6' Diameter</u>
10' or less	25 sec	33 sec	41 sec
11' to 15'	38 sec	49 sec	62 sec
16' to 20'	50 sec	65 sec	81 sec
21' to 25'	62 sec	82 sec	101 sec
25' to 30'	74 sec	98 sec	121 sec

Vacuum testing backfilled manholes is not recommended in the presence of groundwater. Vacuum testing a backfilled manhole that is subjected to hydrostatic pressure may exceed the design limits of the flexible connectors and could lead to failure of the structure, joints, and/or connectors. Where groundwater is present a reduction in the vacuum pressure applied to the manhole will be required. The vacuum shall be reduced by 1 inch of Mercury for every 1 foot of hydrostatic head between 12 feet and 21 feet. A vacuum test should not be performed when the hydrostatic head exceeds 22 feet. See the chart below:

Hydrostatic Head (ft)*	12	13	14	15	16	17	18	19	20	21	22
Vacuum Pressure (in Hg)	10	9	8	7	6	5	4	3	2	1	**

*Hydrostatic head above the critical connector (critical connector is bottom most flexible connector)

**Do not perform vacuum test

If the manhole fails the initial test, the manhole shall be repaired by an approved method until a satisfactory test is obtained. All repair methods shall be approved by the Public Works Commission prior to being utilized. Retesting shall be performed until a satisfactory test is accomplished.

Mandrel Testing:

Deflection tests shall be performed on all PVC pipe installations. PVC pipe's maximum deflection after backfilling shall not exceed five (5) percent. The rigid ball or mandrel used for the deflection test shall have a diameter not less than 95 percent of the base inside diameter or average inside diameter of the pipe depending on the type of pipe manufactured and the applicable ASTM Standard. The PVC pipe shall be measured in compliance with ASTM D2122 "Standard Test Method of Determining Dimensions of Thermoplastic Pipe and Fittings". The Contractor shall supply all labor, equipment and materials necessary to perform the test in the presence of the Public Works Commission's Project Coordinator. The test shall be performed without mechanical pulling devices. The mandrel shall be constructed so as to preclude any yield in diameter, and with a pull line on each end to facilitate withdrawal. If the deflection exceeds the allowable, the Contractor shall remove and replace the pipe.

Air Testing:

Air testing shall be performed on all mains and laterals to determine acceptability. The length of sewer subject to an air test shall be the distance between two adjacent manholes. The tests shall be conducted in accordance with the appropriate ASTM standard. The air test shall be coordinated with the Public Works Commission. The Contractor is required to supply all equipment, labor, materials and pay all costs associated with the test performed.

Air Test for PVC Pipe

The low pressure air test on PVC pipe shall be performed with satisfactory results in accordance with ASTM F1417 "Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air". The pipe, including lateral assemblies, shall be plugged and air added slowly until the

internal pressure of the line is raised to 4.0 psi. After the pressure of 4.0 psi is obtained, regulate the air-supply so that the pressure is maintained between 3.5 and 4.0 psi for at least two (2) minutes, depending on air/ground temperature conditions. The pressure will drop slightly until equilibrium is obtained; however, a minimum of 3.5 psi is required. Once the 3.5 psi is maintained, the test will begin. If the pressure drops 1.0 psi within the time indicated below, the test fails.

Pipe Dia (in)	Minimum time (minutes)	Length for Min Time (ft)	Time for Longer Length (sec)
4	3:46	597	0.380L
6	5:40	398	0.854L
8	7:34	298	1.520L
10	9:26	239	2.374L
12	11:20	199	3.418L
15	14:10	159	5.342L
18	17:00	133	7.692L
21	19:50	114	10.470L
24	22:40	99	13.674L
27	25:30	88	17.306L
30	28:20	80	21.366L
33	31:10	72	25.852L
36	34:00	66	30.768L

The Contractor shall observe all safety precautions to include allowing no one in the manholes during testing, securing all plugs and providing additional plug bracing. The Contractor shall be required to furnish, install and remove after testing at no additional cost, a temporary glue cap/plug to be airtight for all cleanout stacks to accomplish air testing. The air pressure shall never exceed 8 psi. All gauges shall be accessible outside of the manholes.

HYDROSTATIC TESTS

After the ductile iron sewer pipe has been laid within the "protected" area and backfilled to finished grade, the pipe shall be subjected to a hydrostatic pressure test. All laterals within the "protected" area shall be ductile iron. All sewers subject to hydrostatic testing shall include (1) sewers entering or crossing streams, (2) sewers located less than 100 feet from any public or private water supply source including any WS-I waters or Class I or Class II impounded reservoirs, (3) where the minimum 18 inch vertical and 10 feet horizontal separation cannot be maintained between sewers and water mains (see NC DENR Regulations), or (4) as specified and/or indicated on the drawings. The Contractor will furnish all labor and material, including test pumps, plugs, and all other incidentals for making hydrostatic tests. Hydrostatic pressure testing shall be conducted on the completed main, including the laterals.

The duration of the pressure test shall be at least one hour or longer, as directed by the Public Works Commission. The hydrostatic pressure shall be 150 psi. Each section of pipe shall be slowly filled with water and the specified test pressure based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gauge, shall be applied by means of a pump connected to the

pipe in a manner satisfactory to the Public Works Commission. Before applying the specified test pressure, all air shall be expelled from the pipe.

All joints showing visible leaks shall be made tight. Cracked or defective pipe, joints, laterals, and fittings discovered in consequence of the pressure test shall be removed and replaced with sound material, and the test shall be repeated until the test results are satisfactory. The requirement for the joints to remain exposed for the hydrostatic test may be waived by the Public Works Commission in certain situations. The test shall be repeated until satisfactory to the Public Works Commission.

The results of the pressure tests shall be satisfactory as specified. All replacement, repair, or retesting shall be accomplished by the Contractor. All repairs shall be reviewed and approved by the Public Works Commission prior to backfill. The use of couplings, sleeves, etc. shall be reviewed and approved by the Public Works Commission prior to use.

**DIVISION 2
SITE WORK**

02732 SEWAGE FORCE MAINS

GENERAL

Sewage force mains and all appurtenant items shall be constructed of materials as specified or indicated on the drawings. The intent and purpose of these specifications is to require a complete and satisfactory installation in every respect and any defect in material or workmanship shall be cause for replacement and correction of such defect as directed by the Public Works Commission and at no expense to the Public Works Commission. All materials and workmanship shall be in complete accordance with the standards and specifications of the Public Works Commission and subject to Public Works Commission inspection and approval.

RELATED SECTIONS

- A. Section 02222 – Excavation and Backfilling for Utility Systems
- B. Section 02660 – Water Distribution
- C. Section 02730 – Sanitary Sewer System
- D. Section 02736 – High Density Polyethylene Pipe
- E. Section 02753 – Submersible Lift Stations
- F. Section 02754 – Self-Priming Lift Stations
- G. Section 09801 – Special Coatings – Anti-Microbial Admixture
- H. Section 09802 - Special Coatings – Ceramic Epoxy

MATERIALS

PVC PIPE

In order to prevent the sanitary sewer force main from being mistaken for a water main, all force main PVC pipe shall be green in color.

Two (2) inch PVC pipe shall be manufactured using Grade 1 PVC compound material as defined in ASTM D-1784 and shall be SDR21, pressure class 200 in accordance with ASTM D 2241 or SDR-17 with a pressure rating of 250 psi, in accordance with ASTM D-2241. Fittings for two (2) inch PVC shall be solvent welded Schedule 80 PVC. The pipe shall be plainly marked with the manufacturer's name, size, material (PVC) type and grade or compound, NSF seal, pressure rating and reference to appropriate product standards.

All PVC pipe four (4) inches through 12 inches and couplings shall be manufactured using virgin compounds as defined in ASTM D-1784, with a 4000 psi HDB rating and designated as PVC 1120 to be in strict accordance with AWWA C-900. The pipe shall be Class 150 and conform to the thickness requirements of DR18. The pipe and fittings shall be manufactured to withstand 755 psi quick burst

pressure tested in accordance with ASTM D-1599 and withstand 500 psi for a minimum of 1,000 hours tested in accordance with ASTM D-1598. Couplings shall be compression, twin gasket type in accordance with ASTM D-3139 for push-on joints and ASTM F-477 for elastomeric seals (gaskets). PVC fittings are not acceptable for mains other than two (2) inch. The pipe joints shall be of the integral bell type with rubber gaskets shall conform to the requirements of ASTM D-3139 or ASTM F-477. Fittings and specials for mains four (4) inches and larger shall be ductile iron, bell end in accordance with AWWA C-110, 200-psi pressure rating unless otherwise shown or specified, except that profile of bell may have specials of the same material as the pipe with elastomeric-gaskets, all in conformance with the requirements of AWWA C-900. Ductile iron fittings to PVC pipe shall be adequately supported on a firm trench foundation. Fittings shall be for bell and spigot pipe or plain end pipe, or as applicable.

Mechanical restraining systems shall not be used on PVC pipe.

DUCTILE IRON PIPE

All ductile iron pipe and fittings (six (6) inches and above) shall be in strict accordance with ANSI/AWWA C-150/A21.50 and ANSI/AWWA C-151/A21.51, Class 50 in every respect. Four (4) inch ductile iron pipe shall be Class 51. Joints shall be mechanical joint or push on joint as specified and installed in accordance with AWWA C-600 and shall conform to AWWA Standard C-111. Mechanical joints shall be of the stuffing box type and shall conform to ANSI A21.11 for four (4) inch pipe through 12-inch pipe. Push on joints, rubber gaskets and lubricant shall conform to ANSI A21.11. Fittings and specials shall be ductile iron and shall be manufactured in accordance with AWWA Standard C-110 (ANSI A21.11).

Compact fittings shall be mechanically restrained, ductile iron in accordance with ANSI A 21.53 (AWWA C-153) for four (4) inch through 12-inch sizes only. Where thrust blocking is utilized, fittings shall be full body ductile iron in accordance with ANSI A 21.53 (AWWA C110). Pressure rating shall be not less than 200 psi unless otherwise specified. All ductile iron interior surfaces shall be lined with two (2) coats of ceramic epoxy to produce a total minimum dry film thickness of 40 mils (Protecto401 or approved equal). The exterior pipe surfaces shall be protected with asphaltic coating as specified in AWWA C151 and C110. Specifications for the ceramic epoxy can be found in Specification Section 09802.

All pipe joints within an encasement shall be furnished with manufactured restrained joints, and as specified in the standard Public Works Commission detail for encasements.

For aerial crossings which are four (4) inches through 12 inches in diameter, manufactured restrained joint ductile iron pipe Class 53, or Class 53 flanged ductile iron pipe shall be utilized in accordance with the standard Public Works Commission detail for aerial crossings. Mega-lugs, field-lok, and gripper rings are not an allowable means of restraint for aerial crossings. For aerial crossings larger than 12 inches, or as noted specifically on the plans, flange joint ductile iron pipe, Class 53, shall be utilized in accordance with the standard Public Works Commission details. The location of flanges shall be specifically designed for each application. The flange pipe shall be in accordance with ANSI/AWWA C-115/A21.15. Threads for threaded flange pipe shall be in accordance with ANSI B2.1, shop fabricated as outlined by AWWA 115 with serrated faces furnished on the pipe, completely factory installed. Welding of flanges to the

body of the pipe will not be acceptable. Ductile iron fittings and flanges shall be in accordance with ANSI/AWWA C-110/A21.10 with a minimum working pressure of 250 psi. Gaskets shall be full faced SBR rubber per ANSI/AWWA C-111/A21.11 with a minimum 1/8" thickness. Linings and coatings shall be as outlined for ductile iron pipe.

If the Public Works Commission determines that an expansion coupling is required, it shall be installed as indicated on the drawings. The expansion coupling shall not be buried.

For subsurface water crossings (i.e., streams, wetlands), restrained joint ductile iron pipe shall be utilized. No mechanical restraint systems (e.g., mega-lugs, field-lok gaskets, etc.) shall be utilized. The pipe shall be installed in a casing, in accordance with the approved Public Works Commission detail, unless otherwise specifically approved by the Public Works Commission.

Transition between ductile iron pipe and HDPE shall be accomplished utilizing mechanical restraints as approved by PWC.

HDPE PIPE

All high density polyethylene (HDPE) pipe and fittings shall be in accordance with PWC Standard Specification Section 02736, most recent edition.

COMBINATION AIR RELIEF AND VACUUM VALVE ASSEMBLIES

All sewer force mains shall have automatic air release valves installed as indicated on the plans, and in accordance with Public Works Commission requirements. The automatic air release valve shall be a combination air release valve. Combination air release valves shall be heavy duty "universal" style, single body units, incorporating the the functions of an air and vacuum valve within a single housing.

The tap size shall be a minimum of two (2) inches, however if a larger tap is needed it shall be sized accordingly. The valve body, cover flange, and all internal parts shall be 316 stainless steel. The air release orifice shall be as specified by the Design Engineer. The air release valve shall have a maximum working pressure of 200 psi.

All air and vacuum combination release valves shall be Crispin Model UX20, ARI D-020, H-Tec Model 986, or approved equal. All air release valves shall be installed in accordance with the manufacturer's recommendations.

Air relief and vacuum valve manholes shall be 60 inch diameter precast concrete units conforming to ASTM C-478. The combination air relief vacuum valve manhole shall be cast with an anti-microbial admixture, in accordance with manufacturer's instructions. The manholes and valves shall be installed in accordance with the standard PWC detail. The force main shall consist of one full joint of ceramic epoxy coated, ductile iron pipe centered at the air relief valve and a minimum of four (4) feet deep.

Combination air relief and vacuum valves shall be installed using stainless steel double strap service saddles, a two (2) inch ball valve, and a two (2) inch x one (1) inch brass tee with a quick connect attachment as shown in the PWC standard detail.

Service saddles for two (2) inch taps on four (4) inch and larger size iron pipe shall be ductile iron with stainless steel double straps, bolts, nuts and washers

Ball valves shall be all bronze construction, with a handle operator. Ball valves shall be manufactured and tested in accordance with AWWA/ANSI C800. The valve shall be equipped with packing nut, gland, and packing material. Ball valves shall be of an approved type made from approved materials conforming to ASTM specifications and shall also meet the approval of PWC. The turn required to travel from fully closed to fully open on a ball valve shall be 90 degrees.

AIR RELEASE VALVE MANHOLE RING AND COVER

Cast iron manhole frames and covers shall conform to the drawings in all essentials of design with vent holes. The frames and covers shall have a combined weight of not less than 310 pounds and shall conform to ASTM A-48, Class 30 frame and Class 35 cover. Lettering on the cover shall conform to the City of Fayetteville Public Works Commission standards and shall be stamped or cast into all covers so as to be plainly visible. Unless otherwise shown on the drawings, the frames and covers shall be so set that the top of the cover will be flush with finished grade or as directed by PWC.

BY-PASS PUMPING ASSEMBLIES

By-pass pumping assemblies shall be installed in accordance with PWC standard detail S.21. The bypass pumping assembly shall be constructed of ductile iron pipe which meets the requirements of this specification.

INSTALLATION

Pipe installation shall be in strict accordance with Specification Section 02222 – Excavation and Backfilling for Utilities Systems, and as outlined herein.

PIPE LAYING

Pipe installation shall be in accordance with the manufacturer's instructions. Proper equipment shall be utilized to perform the work in a manner satisfactory to PWC. All pipes and fittings shall be carefully lowered into the trench in such a manner to prevent damage to the protective coatings and linings. Under no circumstances shall pipe materials be dropped or dumped into the trench. Pipe shall be carried into position and not dragged.

All dust, dirt, oil, tar (other than standard coating), or other foreign matter shall be cleaned from the jointing surfaces, and the gasket, bell, and spigot shall be lubricated with lubricant recommended by the manufacturer.

Mechanical equipment should not be used to assemble the pipe. Pipe shall be assembled in accordance with the pipe manufacturer's instructions. Any damage resulting from the use of mechanical equipment shall be replaced as directed by PWC.

Adjustments in grade by exerting force on the barrel of the pipe with excavating equipment shall not be allowed. The Contractor shall verify line and grade after assembling each joint.

At any time when pipe laying is not in progress, the open ends of the pipe shall be closed by a water tight plug or other means approved by the PWC Project Coordinator. If water is in the trench, the plug shall remain in place until the trench is pumped completely dry. No pipe shall be laid in water or where in the PWC Project Engineer's and/or PWC Project Coordinator's opinion trench conditions are unsuitable. Every precaution shall be taken to prevent material from entering the pipe while it is being installed.

ALIGNMENT AND GRADE

All pipe shall be installed to the required lines and grades. Structures shall be installed at the required locations. The lines and grades of the pipe will generally be indicated by stakes parallel to the line of the pipe. The Contractor shall be responsible for installing the pipe to proper line and grade.

Threaded PVC and cemented joints will not be permitted. The ends of push on joints shall be beveled to facilitate assembly. Pipe shall be marked to indicate when the pipe is fully seated and the gasket lubricated to prevent displacement. Care shall be exercised to insure that the gasket remains in proper position in the bell or coupling while marking the joint.

All pipe installations shall be properly restrained, utilizing either thrust blocks or approved restraint systems. The thrust blocking shall be in accordance with PWC standards, and as designed by the Engineer. The approved restraint system shall be installed in accordance with the manufacturer's instructions.

For the purpose of identification of buried pipes during future trenching or location, a continuous "detectable" identification wire shall be installed as well as green, "Sanitary Sewer Force Main" marking tape. The wire shall be a minimum 12 gauge single strand, coated copper wire or copper clad steel wire that is suitable for underground use. The wire shall be buried continuously along the pipe. The wire shall be "stubbed" into marker posts and air release valve manholes and secured such that a "direct"/conductive metal detector may be used to trace the pipe location.

The marker posts shall be Rhino TriView TracerPeds which are green with a "Sewer Force Main" warning decal (GD-5314K) and have internal terminals. The marker posts shall utilize the TriGrip Anchor system for direct bury installations. The identification wire shall be attached to the marker posts in accordance with PWC standards. Tracing wire marker posts shall be located no more than 500 feet apart.

When the force main is located in unpaved areas such as easements the marker posts shall be installed along the centerline of the force main. When the force main is located in paved areas the marker posts

may be offset from the centerline of the force main in a uniform manner. The wire shall be installed with all non-metallic pipelines.

The "Sanitary Sewer Force Main" marking tape shall be green and labeled to warn of the presence of the sewer main. The tape shall be manufactured for durability and resistance to the elements. The marking tape shall be installed with both PVC and ductile iron force mains.

CONNECTION TO EXISTING MANHOLES

Where new mains are to be connected to existing active sanitary sewers, the active sewers shall remain in service by the Contractor. Unless otherwise indicated, where new lines are connected into existing manholes, all or such portion of the manhole invert as is necessary in the opinion of the PWC Project Coordinator shall be removed and a new invert shall be constructed to accommodate both new and existing effluent pipes and flows. Where force mains enter manholes, pipe and fittings shall be restrained as indicated on the plans with the force main outlet directed toward invert out.

All work shall conform to the applicable requirements specified for new manholes including all necessary concrete works, brick work, cutting, shaping and pipe fitting. Existing manhole walls, inverts, and shelves shall be coated with cement mixed with an anti-microbial additive in accordance with Specification Section 09801. New manholes that contain a force main discharge shall be cast with an anti-microbial admixture, in accordance with Specification Section 09801. The Contractor shall coordinate and cooperate with the Public Works Commission Project Coordinator on all connections. Connections to any manhole shall be made using the core and boot method. If necessary, drop or slide structures shall be installed, in accordance with PWC standards.

HYDROSTATIC TESTS

After the pipe has been laid, the valves installed, the taps made and the system has been partially backfilled as specified, all newly laid pipe shall be subjected to a hydrostatic pressure test. Where any section of a force main is provided with concrete thrust blocking for fittings, the hydrostatic test shall not be made until at least five (5) days after installation of the blocking unless otherwise approved. The Contractor will furnish all labor and material, including test pumps, taps, and corporations, for making hydrostatic tests. Cost for said tests shall be included in the Proposal. A PWC Project Coordinator shall be present for all testing. The Contractor shall coordinate with the PWC Project Coordinator for disposing of the test water from the system.

The duration of the pressure test shall be at least one hour or longer, as directed by the PWC Project Coordinator. The hydrostatic pressure shall be 200 psi. The pipe shall be slowly filled with water and the specified test pressure based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gauge, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the PWC Project Coordinator. Before applying the specified test pressure, all air shall be expelled from the pipe. If blow offs are not available at the high places, taps shall be made to provide blow offs.

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The results of the pressure test shall be satisfactory as specified. All replacement, repair or retesting shall be accomplished by the Contractor at no additional cost to PWC. All materials and methods used to make repairs shall be approved by PWC. The PWC Project Coordinator shall be present while all repair work is taking place.

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