

PROJECT MANUAL

SPECIFICATIONS AND CONTRACT DOCUMENTS

SEWER SYSTEM IMPROVEMENTS

FOR

SMITHVILLE, TENNESSEE

**CONTRACT 23-01
SEWER SYSTEM REHABILITATION**

**TO BE CONSTRUCTED WITH A GRANT FROM THE
TENNESSEE DEPARTMENT OF ECONOMIC AND
COMMUNITY DEVELOPMENT
CDBG PROJECT NO. 15357 AND
ARPA GRANT NO. 2022-8686**

**ADDENDUM NO. 1 IS INCORPORATED INTO THIS
PROJECT MANUAL**

PROJECT NUMBER 2090

DECEMBER 2023

WAUFORD

2835 Lebanon Pike
Nashville, Tennessee 37214
www.jrwauford.com

PROJECT MANUAL

SPECIFICATIONS AND CONTRACT DOCUMENTS

SEWER SYSTEM IMPROVEMENTS

FOR

SMITHVILLE, TENNESSEE

CONTRACT 23-01
SEWER SYSTEM REHABILITATION

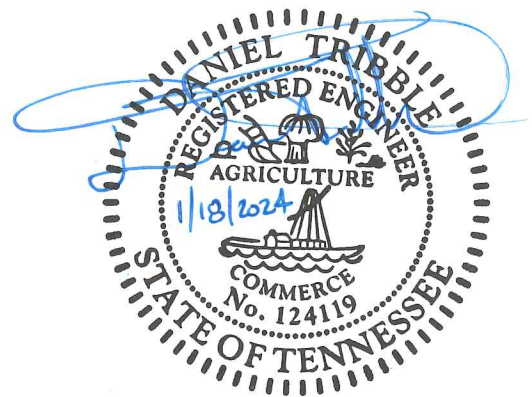
TO BE CONSTRUCTED WITH A GRANT FROM THE
TENNESSEE DEPARTMENT OF ECONOMIC AND
COMMUNITY DEVELOPMENT
CDBG PROJECT NO. 15357 AND
ARPA GRANT NO. 2022-8686

PROJECT NUMBER 2090

DECEMBER 2023

WAUFORD

2835 Lebanon Pike
Nashville, Tennessee 37214
www.jrwauford.com



OFFICIALS

CITY OF SMITHVILLE, TENNESSEE

MAYOR

Josh Miller

VICE MAYOR

Danny Washer

ALDERMEN

Shawn Jacobs
Donnie Crook
Jessica Higgins
Beth Chandler

CITY ADMINISTRATOR

Hunter Hendrixson

PUBLIC WORKS DIRECTOR

Kevin Robinson

CITY ATTORNEY

Vester Parsley, Jr.

TABLE OF CONTENTS
2090 – December 2023

TABLE OF CONTENTS

Advertisement for Bids – CDBG.....	Page 1
Advertisement for Bids.....	AB-1 – AB-3
Information for Bidders.....	Pages 1 – 5
General Conditions	Pages 1 – 36
Supplemental General Conditions	Pages 37 – 69
SLFRF Supplemental Conditions.....	Page 1 – 8
A Listing of the Duties, Responsibilities and Limitations of Authority of the Resident Project Representative	Page 1 – 4
Bid Form	BF-1 – BF-28
Bid Bond	
Acknowledgement Regarding Bidder SAM Registration	
Certification of Bidder Regarding Equal Employment Opportunity	
Certification of Bidder Regarding Use of Female/Minority Subcontractors	
Certification of Subcontractor Regarding Debarment, Suspension, Ineligibility and Exclusion	
Certification of Bidder Regarding Section 3 and Segregated Facilities	
Drug-Free Workplace Affidavit	
Certification by Proposed Subcontractor Regarding Equal Employment Opportunity	
Certification of Proposed Subcontractor of Regarding Section 3 and Segregated Facilities	
Statement of Compliance Certificate Illegal Immigrant	
Certification of Non-Boycott of Israel	
Iran Divestment Act	
Byrd Anti-Lobbying Amendment Certification	
Status of Land Acquisition	
Clearance of LOREC Notations	
Davis-Bacon Wage Rate.....	Page 1 – 4
Agreement	
Bonding and Insurance	
Certificate of Owner’s Attorney	
Performance Bond	PEB-1 – PEB-2
Payment Bond	PAB-1 – PAB-2

Detailed Specifications

SECTION 1 – General Scope and Special Provisions

1. Scope.....	DS 1-1
2. Execution and Coordination of the Work.....	DS 1-1
3. Temporary Traffic Control Plan	DS 1-2

TABLE OF CONTENTS

2090 – December 2023

4.	Time of Completion and Liquidated Damages	DS 1-2
5.	Bypass Pumping.....	DS 1-3
6.	Guarantee – One Year Warranty	DS 1-3
7.	Engineer’s Authority.....	DS 1-3
8.	Shop Drawings.....	DS 1-4
9.	Initial Videos, Pictures and Progress Pictures.....	DS 1-5
10.	Progress Schedule and Progress Meetings.....	DS 1-5
11.	Utilities Required by Contractor	DS 1-5
12.	Project Sign.....	DS 1-6
13.	Field Office and Supervision	DS 1-6
14.	Existing Utilities.....	DS 1-6
15.	Permits, Codes, Agreements and/or Contract with Private Utilities.....	DS 1-7
16.	Protection of Roadways On and Off-Site	DS 1-7
17.	Lands, Rights-of-Way and Limits of Work.....	DS 1-7
18.	Undesirable Workmen	DS 1-8
19.	Work Hours.....	DS 1-8
20.	Materials or Equipment to be Furnished	DS 1-8
21.	Occupational Safety and Health Act	DS 1-9
22.	Noise and Odor Control	DS 1-9
23.	Chemical Requirements.....	DS 1-9
24.	Confined Spaces.....	DS 1-9
25.	Lines and Grades.....	DS 1-10
26.	Restoration of Disturbed Areas/Work on or Adjacent to Private Property	DS 1-10
27.	Reference to Tennessee Department of Transportation Specifications and Standard Roadway and Structure Drawings	DS 1-10
28.	References to Standard General Conditions of the Construction Contract	DS 1-11
29.	Applicability of Governing Standards	DS 1-11
30.	Connecting to Existing Lines.....	DS 1-11
31.	Water and Uplift	DS 1-11
32.	Subsurface Conditions/Site Conditions.....	DS 1-11
33.	Blasting	DS 1-12
34.	Flooding	DS 1-12
35.	Temporary Project Water Pollution Control (Soil Erosion)	DS 1-12
36.	Substantial Completion/Delays in Final Completion.....	DS 1-13
37.	Final Clean-Up.....	DS 1-13
	Storm Water Pollution Prevention Plan	
	Aquatic Resource Alteration Permit	
	TDOT Utility Permit	

SECTION 2 – Testing and Control of Materials

1.	Scope	DS 2-1
2.	Cost of Tests and Selection of Testing Agencies	DS 2-1

TABLE OF CONTENTS

2090 – December 2023

3.	Sources of Supply	DS 2-1
4.	Approval of Testing Agencies and Reports	DS 2-2
5.	Governing Specifications	DS 2-2
6.	Extent of Inspection and Testing Services	DS 2-2
7.	Cement	DS 2-3
8.	Fine Aggregate (For Use in Cement Concrete)	DS 2-3
9.	Coarse Aggregate (For Use in Cement Concrete)	DS 2-3
10.	Advance Tests of Concrete Design Mix(es)	DS 2-3
11.	Reinforcing Steel.....	DS 2-3
12.	Structural Steel	DS 2-4
13.	Steel Bar Joists.....	DS 2-4
14.	Brick.....	DS 2-4
15.	Building Stone.....	DS 2-4
16.	Concrete Pipe	DS 2-4
17.	Polyvinyl Chloride (PVC) Pressure Pipe	DS 2-4
18.	Polyvinyl Chloride (PVC) Sewer Pipe	DS 2-5
19.	Ductile Iron Pipe and Special Castings	DS 2-5
20.	Grey Iron Castings	DS 2-5
21.	Polyethylene Pipe	DS 2-5

SECTION 3 – Concrete and Reinforcing Steel

1.	Scope	DS 3-1
2.	Reference Codes and Standards.....	DS 3-1
3.	Class of Concrete	DS 3-2
4.	Determination of Strength of Concrete.....	DS 3-3
5.	Concrete Design Mixes	DS 3-3
6.	Materials for Concrete.....	DS 3-3
7.	Proportioning of Materials for Concrete	DS 3-5
8.	Source of Supply of Concrete	DS 3-5
9.	Alteration of Concrete Slump (Retempering)	DS 3-7
10.	Placing of Concrete.....	DS 3-7
11.	Curing of Concrete	DS 3-10
12.	Joints in Concrete	DS 3-11
13.	Non-Shrink Grout.....	DS 3-14
14.	Forms of Concrete Work.....	DS 3-14
15.	Floor Drains, Sleeves, and Inserts	DS 3-17
16.	Slabs on Grade	DS 3-17
17.	Aluminum Safety Treads.....	DS 3-19
18.	Concrete Finish.....	DS 3-20
19.	Watertightness	DS 3-22
20.	Defective Concrete	DS 3-23
21.	Testing of Concrete.....	DS 3-23
22.	Reinforcing Steel.....	DS 3-24
23.	Concrete Repair Material	DS 3-26

TABLE OF CONTENTS
2090 – December 2023

SECTION 4 – Renovation of Gravity Sewers by Open-Cut Methods, Manhole Replacements, and Appurtenances

1.	Scope.....	DS 4-1
2.	Bypass Pumping.....	DS 4-1
3.	Pipe Materials for Sanitary Sewers.....	DS 4-1
4.	On-Site Inspection of Pipe Materials.....	DS 4-6
5.	Shoring, Sheet piling and Bracing of Excavations.....	DS 4-6
6.	Excavation for Open-Cut Replacement of Sewer and Manholes.....	DS 4-6
7.	Pipe Bedding for Sanitary Sewers.....	DS 4-9
8.	Pipe Laying for Sanitary Sewers.....	DS 4-10
9.	Manhole Replacement or Addition of Manhole to Existing Sewer.....	DS 4-11
10.	Backfilling Excavations.....	DS 4-14
11.	Testing Sanitary Sewer Manholes.....	DS 4-15
12.	Leakage Testing of New Gravity Sewer Lines.....	DS 4-15
13.	Replacing Streets and Roadways.....	DS 4-17
14.	Finish Grading, Topsoiling and Seeding.....	DS 4-19
15.	Class “C” Concrete.....	DS 4-20
16.	Class “A” Concrete.....	DS 4-20
17.	Removing and Replacing Concrete Driveways and Paved Ditches.....	DS 4-20
18.	Removing and Replacing Sidewalks, Curbs and Gutters.....	DS 4-21
19.	Creek Crossings.....	DS 4-21

SECTION 5 – Renovation of Gravity Sewer Lines by Pipe Bursting Methods

1.	Scope.....	DS 5-1
2.	Pre-Installation Preparations.....	DS 5-1
3.	Bypass Pumping.....	DS 5-4
4.	Pipe Bursting System.....	DS 5-4
5.	Pipeline Materials – Gravity Sewers.....	DS 5-5
6.	Installation Procedures.....	DS 5-6
7.	Testing Rehabilitated Gravity Sewers.....	DS 5-8
8.	Post Construction Television Inspection.....	DS 5-8

SECTION 6 – Basis of Payment

1.	General.....	DS 6-1
2.	Gravity Sewer Lines by Open-Cut Methods.....	DS 6-1
3.	Plugging Existing Sewer.....	DS 6-1
4.	Renovation of Existing Gravity Sewer Lines Using Pipe Bursting.....	DS 6-1
5.	Pipe for Sewer Service Connections.....	DS 6-2
6.	Sewer Service Connections.....	DS 6-2
7.	Connection to Existing Facilities.....	DS 6-3

TABLE OF CONTENTS
2090 – December 2023

8.	Replacement of Existing Manhole or Addition of Manhole to Existing Sewer	DS 6-3
9.	Standard Drop Manholes	DS 6-3
10.	Manhole Barrel Extension	DS 6-4
11.	Undercutting of Trench and Stone for Undercutting	DS 6-4
12.	Class "A" Concrete for Sidewalks, Driveways and Paved Ditch Removal and Replacement	DS 6-4
13.	Class "A" Concrete for Curb and Gutter Removal and Replacement.....	DS 6-4
14.	Class "C" Concrete for Encasement	DS 6-4
15.	TDOT No. 67 Crushed Stone for Ditch Backfill Under Paved Surfaces Where Required by the Engineer.....	DS 6-5
16.	Dense Grade Aggregate Crushed Stone for Traffic Bound Surfacing, Base Course and/or Backfill Where Required by the Engineer.....	DS 6-5
17.	Binder Course for Roadways	DS 6-5
18.	Asphaltic Concrete Pavement.....	DS 6-5
19.	Temporary Silt Fence.....	DS 6-6
20.	Impervious Check Dams	DS 6-6
21.	Rip-Rap.....	DS 6-6
22.	Restrained Joint Pipe.....	DS 6-6
23.	Razing of Existing Manholes.....	DS 6-6
24.	Aerial Pipe Supports	DS 6-6

ADVERTISEMENT FOR BIDS

Project No. _____

_____ (Owner)

Separate sealed bids for _____ for

_____ will be received by _____

at the office of _____

until _____ o'clock ~~AM~~ P.M., C.S.T./~~EST~~ _____, 20____, and then at said office publicly opened and read aloud.

The Information for Bidders, Form of Bid, Form of Contract, Plans, Specifications, and Forms of Bid Bond, Performance and Payment Bond, and other contract documents may be examined at the following:

Complete digital project bidding documents are available at www.questcdn.com and/or www.jrwauford.com. Bidders may download the digital plan documents for \$45.00 by inputting Quest project # 9155209 on the QuestCDN project search page. Please contact QuestCDN at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with the digital project information. Inquiries should be directed to Daniel G. Tribble, P.E., Project Manager, email danielt@jrwauford.com.

The owner reserves the right to waive any informalities or to reject any or all bids.

Each bidder must deposit with his bid, security in the amount, form and subject to the conditions provided in the Information for Bidders.

All bidders must be licensed General Contractors as required by the Contractor's Licensing Act of 1994 of the General Assembly of the State of Tennessee, and qualified for the type of construction being bid upon.

Attention of bidders is particularly called to the requirements as to conditions of employment to be observed and minimum wage rates to be paid under the contract, Section 3, Segregated Facility, Section 109 and E.O. 11246.

No bidder may withdraw his bid within 90 days after the actual date of the opening thereof.

05/29/2024 (Date) _____

ADVERTISEMENT FOR BIDS
2090 – December 2023

ADVERTISEMENT FOR BIDS
SEWER SYSTEM IMPROVEMENTS
CITY OF SMITHVILLE, TENNESSEE
CDBG PROJECT NO. 15357
ARPA PROJECT NO. 2022-8686

Separate sealed bids for construction of Sewer System Improvements will be received by the City of Smithville at City Hall, 104 East Main Street, Smithville, Tennessee 37166 until 2:00 p.m. Central Time Tuesday, June 25, 2024, at which time and place they will be publicly opened and read aloud. Mailed bids should be addressed to the Honorable Josh Miller, Mayor, 104 East Main Street, Smithville, Tennessee 37166, and each bidder shall be responsible for their delivery by the above noted time.

The work involved is in one (1) contract and consists of the following generally described work:

CONTRACT 23-01
SEWER SYSTEM REHABILITATION

- Replacement of approximately 3,141 L.F. of 10-inch Gravity Sewer via Open-Cut Methods
- Replacement of approximately 3,820 L.F. of 8-inch Gravity Sewer via Open-Cut Methods
- Replacement of approximately 1,999 L.F. of 8-inch Gravity Sewer via Pipe Bursting Methods
- 48 Precast Manholes

The allotted time for construction is 270 calendar days; liquidated damages for non-completion are \$1,000 per calendar day.

The CONTRACT DOCUMENTS may be examined at the following locations:

J. R. Wauford & Company, 2835 Lebanon Pike, Nashville, TN 37214

Complete digital project bidding documents are available at www.questcdn.com and/or www.jrwauford.com. Bidders may download the digital plan documents for \$45.00 by inputting Quest project # 9155209 on the QuestCDN project search page. Please contact QuestCDN at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with the digital project information. Inquiries should be directed to Daniel G. Tribble, P.E., Project Manager, email danielt@jrwauford.com.

This project is being supported with Treasury, Coronavirus State and Local Recovery Fund grant funding; therefore, certain restrictions and other federal requirements attach to this opportunity. The City of Smithville hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement will

ADVERTISEMENT FOR BIDS

2090 – December 2023

be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, or national origin in consideration for an award. The City of Smithville is an Equal Opportunity Employer. Any contract that uses federal funds to pay for construction work is a “federally assisted construction contract” and must include the equal opportunity clause found in 2 C.F.R. Part 200, unless otherwise stated in 41 C.F.R. Part 60. We encourage all small and minority owned firms and women’s business enterprises to participate. No bidder may withdraw his bid within (60) days after the actual date of the opening thereof. Mutually agreed upon time extensions may be made if necessary.

The Copeland "Anti-Kickback" Act is also applicable, which prohibits workers on construction contracts from giving up wages that they are owed. Contractors must not appear on Sam.gov disbarment list.

Any contract or contracts awarded by the Owner through this invitation for bids will be partially funded by a Community Development Block Grant administered by the Tennessee Department of Economic and Community Development, Project No. 15357. Federal funds will be involved in this project, and, therefore, the Contractor shall be required to meet all applicable MBE/WBE requirements. The loan recipient must be in compliance with all applicable Davis-Bacon Act requirements.

Qualified DBE firms may contact the office of the Engineer, 2835 Lebanon Pike, Nashville, Tennessee 37214, 615-883-3243 in order to obtain a list of prospective bidding General Contractors or to obtain copies of bidding/contract documents.

Each bidder must deposit with his bid, security in the amount, form and subject to the conditions provided in the Instructions for Bidders.

The successful bidder is required to furnish both an acceptable performance bond and payment bond each in the amount of one hundred percent (100%) of the contract price.

All bidders must be licensed General Contractors as required by the Contractor's Licensing Act of 1976 of the General Assembly of the State of Tennessee and qualified for the type of construction being bid upon. EACH BIDDER SHALL WRITE ON THE OUTSIDE OF THE ENVELOPE CONTAINING THE BID THE CONTRACTOR'S LICENSE NUMBER, THE EXPIRATION DATE, AND THAT PART OF THE CLASSIFICATION APPLYING TO THIS BID. If this is not done, the bid will not be opened.

Each bidder shall be properly licensed and abide by the provisions of TCA 62-6-119 including part (b) which states in part:

“(b) The person or entity involved in the preparation of the invitation to bid or comparable bid documents, including any electronic bid documents, shall direct that the following information be written upon the bid envelope or provided within the electronic bid document: (1) The name, license number, expiration date thereof, and license

ADVERTISEMENT FOR BIDS

2090 – December 2023

classification of the contractor applying to bid for the prime contract; (2) The name, license number, expiration date thereof, and license classification of the contractor applying to bid for the masonry contract where the total cost of the materials and labor for the masonry portion of the construction project exceeds one hundred thousand dollars (\$100,000); (3) The name, license number, expiration date thereof, and license classification of the contractor applying to bid for the electrical, plumbing, heating, ventilation, or air conditioning contracts except when such contractor's portion of the construction project is less than twenty-five thousand dollars (\$25,000); (4) For each vertical closed loop geothermal heating and cooling project, the company name, Department of Environment and Conservation license number, classification (G, L or G,L) and the expiration date, except when the geothermal portion of the construction project is in an amount less than twenty-five thousand dollars (\$25,000); (5) Prime contractor bidders who are to perform the masonry portion of the construction project which exceeds one hundred thousand dollars (\$100,000), materials and labor, the electrical, plumbing, heating, ventilation or air conditioning or the geothermal heating and cooling must be so designated; and (6) Only one (1) contractor in each of the classifications listed above shall be written on the bid envelope or provided within the electronic bid document.”

In compliance with TCA 12-4-126(a) and (b), the ENGINEER will not issue addenda less than forty-eight (48) hours before the bid opening date and time. Any questions concerning the bid documents shall be received by the ENGINEER before ninety-six (96) hours prior to the bid opening date and time.

The Owner reserves the right to reject any and all bids, to waive informalities, and to negotiate with the apparent qualified best bidder or bidders to such extent as may be necessary.

CITY OF SMITHVILLE, TENNESSEE

/s/

Honorable Josh Miller, Mayor

INFORMATION FOR BIDDERS

1. Receipt and Opening of Bids

The _____ (herein called the "Owner), invites bids on the form attached hereto, all blanks of which must be appropriately filled in. Bids will be received by the Owner at the office of

_____ until _____ o'clock ~~XXX~~/P.M.,
 C.S.T/~~EST~~, _____, 20____, and then at said office publicly opened and read aloud. The envelopes containing the bids must be sealed, addressed to _____ at _____ and designated as bid for _____.

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 90 days after the actual date of the opening thereof.

2. Preparation of Bid:

Each bid must be submitted on the prescribed form and accompanied by Certification of Bidder Regarding Equal Employment Opportunity, Acknowledgment Regarding Bidder SAM Registration, Certification of Bidder Regarding Section 3 and Segregated Facilities, and Drug-Free Workplace Affidavit. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures, and the foregoing Certifications must be fully completed and executed when submitted.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his/her address, the name of the project for which the bid is submitted, license number, expiration date thereof, and license classification of the contractors applying to bid for the prime contract, and for the electrical, plumbing, heating, ventilation, and air conditioning contracts, and all other information required by State law..

All bidders must be licensed General Contractors as required by the Contractor's Licensing Act of 1994 of the General Assembly of the State of Tennessee, and qualified for the type of construction being bid upon. Each bidder shall write on the outside of the envelope containing its bid: 1) its Contractor's license number; 2) that part of the classification applying to the bid. If this is not done, the bid will not be opened.

3. Subcontracts:

The bidder is specifically advised that any person, for, or other party to whom it is proposed to award a subcontract under this contract:

- a. Must be acceptable to the owner; and
- b. Must submit Certification by Proposed Subcontractor Regarding Equal Employment Opportunity, and Certification of Proposed Subcontractor Regarding Section 3 and Segregated Facilities. Approval of the proposed subcontract award cannot be given by the owner unless and until the proposed subcontractor has submitted the Certifications and/or other evidence showing that it has fully complied with any reporting requirements to which it is or was subject.

Although the bidder is not required to attach such Certifications by proposed subcontractors to his/her bid, the bidder is here advised of this requirement so that appropriate action can be taken to prevent subsequent delay in subcontract awards.

4. Telegraphic Modification:

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

5. Method of Bidding:

The Owner invites the following bid(s):

6. Qualification of Bidder:

The Owner may make such investigations as s/he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

7. Bid Security:

Each bid must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the form of bid bond attached thereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of 5% of the bid. Such cash, checks or bid bonds will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining cash, checks or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within 60 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he/she has not been notified of the acceptance of his/her bid.

8. Liquidated Damages for Failure to Enter into Contract:

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

9. Time of Completion and Liquidated Damages:

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within _____ consecutive calendar days thereafter. Bidder must agree also to pay as liquidated damages, the sum of \$_____ for each consecutive calendar day thereafter as hereinafter provided in the Supplemental General Conditions.

10. Condition of Work:

Each bidder must inform him/herself fully of the conditions relating to the construction of the project and the employment of labor thereof. Failure to do so will not relieve a successful bidder of his/her obligation to furnish all material and labor necessary to carry out the provisions of his/her contract. Insofar as possible, the contractor, in carrying out the work, must employ such methods as will not cause any interruption of or interference with the work of any other contractor.

11. Addenda and Interpretations:

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally.

Every request for such interpretation should be in writing addressed to

_____ at _____
and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested or emailed to all prospective bidders (at the respective addresses furnished for such purposes), not later than two days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the contract documents.

12. Security for Faithful Performance:

Simultaneously with his/her delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner.

13. Power of Attorney:

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

14. Notice of Special Conditions:

Attention is particularly called to those parts of the contract documents and specifications which deal with the following:

- a. Inspection and testing of materials.
- b. Insurance requirements.
- c. Wage rates.
- d. Stated allowances.

15. Laws and Regulations:

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

16. Method of Award - Lowest Qualified Bidder:

After receiving bids and determining the amount of funds estimated by the OWNER as available to finance the contract, the OWNER will award the contract to the lowest responsible bidder. The lowest responsible bidder will be determined upon the basis of the lowest base bid or lowest base bid combined with alternates (additive or deductive). If the contract is to be awarded based on the lowest base bid with alternates, alternates will be accepted in the numerical order in which they are listed in the Form of Bid.

17. Obligation of Bidder:

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of his/her bid.

18. Safety Standards and Accident Prevention: With respect to all work performed under this contract, the Contractor shall:

- a. Comply with the safety standards provisions of applicable laws, building and construction codes and the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the "Federal Register", Volume 36, No. 75, Saturday, April 17, 1971.
- b. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.
- c. Maintain at his/her office or other well known place at the job site, all articles necessary for giving first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or a doctor's care of persons (including employees), who may be injured on the job site. In no case shall employees be permitted to work at a job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor's care.

Community Development Block Grant Program GENERAL CONDITIONS

1. Contract and Contract Documents

The project to be constructed and pursuant to this contract will be financed with assistance from the Tennessee Community Development Block Grant Program and is subject to all applicable Federal laws and regulations.

The Plans, Specifications and Addenda, hereinafter enumerated in Paragraph 1 of the Supplemental General Conditions shall form part of this Contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents, titles, headings, running headlines and marginal notes contained herein and in said documents are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or cast light on the interpretation of the provisions to which they refer.

TABLE OF CONTENTS OF GENERAL CONDITIONS

<u>Article Number</u>	<u>Title</u>	<u>Page</u>
1	DEFINITIONS	11
2	PRELIMINARY MATTERS	12
3	CONTRACT DOCUMENTS: INTENT, AMENDING AND REUSE	13
4	AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS	14
5	BONDS AND INSURANCE	15
6	CONTRACTOR'S RESPONSIBILITIES	19
7	OTHER WORK	24
8	OWNER'S RESPONSIBILITIES	22
9	ENGINEER'S STATUS DURING CONSTRUCTION	22
10	CHANGES IN THE WORK	25
11	CHANGE OF CONTRACT PRICE	25
12	CHANGE OF CONTRACT TIMES	30
13	TESTS AND INSPECTIONS; CORRECTION; REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK	30
14	PAYMENTS TO CONTRACTOR AND COMPLETION	32
15	SUSPENSION OF WORK AND TERMINATION	34
16	DISPUTE RESOLUTION	35
17	MISCELLANEOUS	35

1.	DEFINITIONS	53	3.6	Supplementing Contract Documents	56
1.1	Addendum	53	3.7	Reuse of Documents	57
1.2	Agreement	53	4.	AVAILABILITY OF LANDS; SUBSURFACE AND	
1.3	Application for Payment	53		PHYSICAL CONDITIONS; REFERENCE POINTS	57
1.4	Asbestos	53	4.1	Availability of Lands	57
1.5	Bid	53	4.2	Subsurface and Physical Conditions	57
1.6	Bidding Documents	53	4.2.1	Reports and Drawings	57
1.7	Bidding Requirements	53	4.2.2	Limited Reliance by CONTRACTOR	
1.8	Bonds	53		Authorized; Technical Data	57
1.9	Change Order	53	4.2.3	Notice of Differing Subsurface or	
1.10	Contract Documents	53		Physical Conditions	57
1.11	Contract Price	53	4.2.4	ENGINEER's Review	57
1.12	Contract Times	53	4.2.5	Possible Contract Documents Change	58
1.13	CONTRACTOR	53	4.2.6	Possible Price and Times Adjustments	58
1.14	defective	53	4.3	Physical Conditions--Underground	
1.15	Drawings	53		Facilities	58
1.16	Effective Date of the Agreement	53	4.3.1	Shown or Indicated	58
1.17	ENGINEER	53	4.3.2	Not Shown or Indicated	58
1.18	ENGINEER's Consultant	53	4.4	Reference Points	58
1.19	Field Order	53	4.5	Asbestos, PCB's, Petroleum, Hazardous	
1.20	General Requirements	53		Waste or Radioactive Material	59
1.21	Hazardous Waste	53	5.	BONDS AND INSURANCE	59
1.22	Laws and Regulations; Laws or		5.1-5.2	Performance, Payment and Other Bonds... 59	
	Regulations	53	5.3	Licensed Sureties and Insurers;	
1.23	Liens	54		Certificates of Insurance	59
1.24	Milestone	54	5.4	CONTRACTOR's Liability Insurance	60
1.25	Notice of Award	54	5.5	OWNER's Liability Insurance	60
1.26	Notice to Proceed	54	5.6	Property Insurance	60
1.27	OWNER	54	5.7	Boiler and Machinery or Additional	
1.28	Partial Utilization	54		Property Insurance	61
1.29	PCBs	54	5.8	Notice of Cancellation Provisions	61
1.30	Petroleum	54	5.9	CONTRACTOR's Responsibility for	
1.31	Project	54		Deductible Amounts	61
1.32	Radioactive Material	54	5.10	Other Special Insurance	61
1.33	Resident Project Representative	54	5.11	Waiver of Rights	61
1.34	Samples	54	5.12-5.13	Receipt and Application of Insurance	
1.35	Shop Drawings	54		Proceeds	61
1.36	Specifications	54	5.14	Acceptance of Bonds and Insurance;	
1.37	Subcontractor	54		Option to Replace	62
1.38	Substantial Completion	54	5.15	Partial Utilization--Property	
1.39	Supplementary Conditions	54		Insurance	62
1.40	Supplier	54	6.	CONTRACTOR'S RESPONSIBILITIES	62
1.41	Underground Facilities	54	6.1-6.2	Supervision and Superintendence	62
1.42	Unit Price Work	54	6.3-6.5	Labor, Materials and Equipment	62
1.43	Work	54	6.6	Progress Schedule	62
1.44	Work Change Directive	54	6.7	Substitutes and "Or-Equal" Items;	
1.45	Written Amendment	55		CONTRACTOR's Expense;	
2.	PRELIMINARY MATTERS	55		Substitute Construction	
2.1	Delivery of Bonds	55		Methods or Procedures;	
2.2	Copies of Documents	55		ENGINEER's Evaluation	63
2.3	Commencement of Contract Times;		6.8-6.11	Concerning Subcontractors, Suppliers	
	Notice to Proceed	55		and Others; Waiver of Rights	63
2.4	Starting the Work	55	6.12	Patent Fees and Royalties	64
2.5-2.7	Before Starting Construction;		6.13	Permits	64
	CONTRACTOR's Responsibility to Report:		6.14	Laws and Regulations	64
	Preliminary Schedules;		6.15	Taxes	64
	Delivery of Certificates of		6.16	Use of Premises	65
	Insurance	55	6.17	Site Cleanliness	65
2.8	Preconstruction Conference	55	6.18	Safe Structural Loading	65
2.9	Initially Acceptable Schedules	55	6.19	Record Documents	65
3.	CONTRACT DOCUMENTS: INTENT,		6.20	Safety and Protection	65
	AMENDING, REUSE	56	6.21	Safety Representative	65
3.1-3.2	Intent	56	6.22	Hazard Communication Programs	65
3.3	Reference to Standards and		6.23	Emergencies	65
	Specifications of Technical Societies;		6.24	Shop Drawings and Samples	66
	Reporting and Resolving		6.25	Submittal Procedures;	
	Discrepancies	56		CONTRACTOR's Review Prior to	
3.4	Intent of Certain Terms or Adjectives	56		Shop Drawing or Sample Submittal.....	66
3.5	Amending Contract Documents	56			

6.26	Shop Drawing & Sample Submittals Review by ENGINEER	66	12.4	Delays Beyond OWNER's and CONTRACTOR's Control	74
6.27	Responsibility for Variation From Contract Documents	66	13.	TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK	74
6.28	Related Work Performed Prior to ENGINEER's Review and Approval of Required Submittals	66	13.1	Notice of Defects	74
6.29	Continuing the Work	66	13.2	Access to the Work	74
6.30	CONTRACTOR's General Warranty and Guarantee	67	13.3	Tests and Inspections; Contractor's Cooperation	74
6.31-6.33	Indemnification	67	13.4	OWNER's Responsibilities: Independent Testing Laboratory	74
6.34	Survival of Obligations	67	13.5	CONTRACTOR'S Responsibilities.....	74
7.	OTHER WORK	67	13.6-13.7	Covering Work Prior to Inspection, Testing or Approval	74
7.1-7.3	Related Work at Site	67	13.8-13.9	Uncovering Work at ENGINEER's Request	74
7.4	Coordination.....	68	13.10	OWNER May Stop the Work	75
8.	OWNER'S RESPONSIBILITIES	68	13.11	Correction or Removal of Defective Work	75
8.1	Communications to Contractor	68	13.12	Correction Period.....	75
8.2	Replacement of ENGINEER	68	13.13	Acceptance of Defective Work	75
8.3	Furnish Data and Pay Promptly When Due	68	13.14	OWNER May Correct Defective Work	75
8.4	Lands and Easements; Reports and Tests	68	14.	PAYMENTS TO CONTRACTOR AND COMPLETION.....	76
8.5	Insurance	68	14.1	Schedule of Values	76
8.6	Change Orders	68	14.2	Application for Progress Payment.....	76
8.7	Inspections, Tests and Approvals	68	14.3	CONTRACTOR's Warranty of Title	76
8.8	Stop or Suspend Work; Terminate CONTRACTOR's Services	68	14.4-14.7	Review of Applications for Progress Payments	76
8.9	Limitations on OWNER's Responsibilities	68	14.8-14.9	Substantial Completion.....	77
8.10	Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Material	68	14.10	Partial Utilization.....	77
8.11	Evidence of Financial Arrangements	68	14.11	Final Inspection	77
9.	ENGINEER'S STATUS DURING CONSTRUCTION	68	14.12	Final Application for Payment.....	78
9.1	OWNER's Representative	68	14.13-14.14	Final Payment and Acceptance.....	78
9.2	Visits to Site	68	14.15	Waiver of Claims.....	78
9.3	Project Representative	69	15.	SUSPENSION OF WORK AND TERMINATION.....	78
9.4	Clarifications and Interpretations	69	15.1	OWNER May Suspend Work	78
9.5	Authorized Variations in Work	69	15.2-15.4	OWNER May Terminate	78
9.6	Rejecting Defective Work	69	15.5	CONTRACTOR May Stop Work or Terminate.....	79
9.7-9.9	Shop Drawings, Change Orders and Payments	69	16.	DISPUTE RESOLUTION	79
9.10	Determinations for Unit Prices	69	17.	MISCELLANEOUS	79
9.11-9.12	Decisions on Disputes; ENGINEER as Initial Interpreter	69	17.1	Giving Notice	79
9.13	Limitations on ENGINEER's Authority and Responsibilities	70	17.2	Computation of Times	79
10.	CHANGES IN THE WORK	70	17.3	Notice of Claim.....	80
10.1	OWNER Ordered Change	70	17.4	Cumulative Remedies	80
10.2	Claim for Adjustment	70	17.5	Professional Fees and Court Costs Included	80
10.3	Work Not Required by Contract Documents	70			
10.4	Change Orders	70			
10.5	Notification of Surety	71			
11.	CHANGE OF CONTRACT PRICE	71			
11.1-11.3	Contract Price; Claim for Adjustment; Value of the Work	71			
11.4	Cost of the Work	71			
11.5	Exclusions to Cost of the Work	72			
11.6	CONTRACTOR's Fee	73			
11.7	Cost Records	73			
11.8	Cash Allowances	73			
11.9	Unit Price Work	73			
12.	CHANGE OF CONTRACT TIMES	73			
12.1	Claim for Adjustment	73			
12.2	Time of the Essence	74			
12.3	Delays Beyond CONTRACTOR's Control	74			

<i>Article or Paragraph Number</i>	<i>Article or Paragraph Number</i>
Acceptance of--	
Bonds and Insurance	5.14
defective Work	10.4.1, 13.13, 13.15
final payment	9.12,14.15
insurance	5.14
other Work, by CONTRACTOR	7.3
Substitutes and "Or-Equal" Items.....	6.7.1
Work by OWNER.....	2.5, 6.30, 6.34
Access to the--	
Lands, OWNER and CONTRACTOR	
responsibilities	4.1
site, related work	7.2
Work,	13.2, 13.14, 14.9
Acts or Omissions--, Acts and Omissions--	
CONTRACTOR	6.9.1, 9.13.3
ENGINEER	6.20, 9.13.3
OWNER.....	6.20, 8.9
Addenda--definition of (also see	
definition of Specifications)	(1.6, 1.10, 6.19) 1.1
Additional Property Insurances	5.7
Adjustments	
Contract Price or Contract	
Times	1.5, 3.5, 4.1, 4.3.2, 4.5.2, 4.5.3, 9.4, 9.5, 10.2-10.4, 11, 12, 14.8, 15.1
progress schedule.....	6.6
Agreement--	
definition of	1.2
All risk Insurance, policy form	5.6.2
Allowances, Cash	11.8
Amending Contract Documents	3.5
Amendment, Written--	
in general	1.10, 1.45, 3.5, 5.10, 5.12, 6.6.2, 6.8.2, 6.19, 10.1, 10.4, 11.2, 12.1, 13.12.2, 14.7.2
Appeal,, OWNER or CONTRACTOR	
intent to	9.10, 9.11, 10.4, 16.2, 16.5
Application for Payment--	
definition of	1.3
ENGINEER's Responsibility	9.9
final payment	9.13.4, 9.13.5, 14.12-14.15
in general	2.8, 2.9, 5.6.4, 9.10, 15.5
progress payment	14.1, 14.7
review of	14.4-14.7
Arbitration (Optional).....	16.1-16.6
Asbestos--	
claims pursuant thereto	4.5.2, 4.5.3
CONTRACTOR authorized to stop Work	4.5.2
definition of	1.4
OWNER responsibility for.....	4.5.1, 8.10
possible price and times change.....	4.5.2
Authorized Variations in Work	3.6, 6.25, 6.27, 9.5
Availability of Lands.....	4.1, 8.4
Award, Notice of--defined.....	1.2.5
Before Starting Construction	2.5-2.8
Bid--definition of	1.5
(1.1, 1.10, 2.3, 3.3, 4.2.6.4, 6.13, 11.4.3, 11.9.1)	
Bidding Documents--definition of	1.6 (6.8.2)
Bidding Requirements--definitions of	1.7 (1.1, 4.2.6.2)
Bonds--	
acceptance of	5.14
additional bonds.....	10.5, 11.4.5.9
Cost of the Work.....	11.5.4
definition of	1.8
delivery of	2.1, 5.1
final application for payment	14.12-14.14
general	1.10, 5.1-5.3, 5.13, 9.13, 10.5, 14.7.6
performance, Payment and Other.....	5.1-5.2
Bonds and Insurance--in general	5
Builder's risk "all risk" policy form	5.6.2
Cancellation Provisions, Insurance.....	5.4.11, 5.8, 5.15
Cash Allowances	11.8
Certificate of Substantial Completion.....	1.38, 6.30.2.3,
Certificates of Inspection	9.13.4, 13.13.4.2
Certificates of Insurance	2.7, 5.3, 5.4.11, 5.4.13, 5.6.5, 5.8 5.14, 9.13.4, 14.12
Change in Contract Price--	
Cash Allowances	11.8
claim for price adjustment.....	4.1, 4.2.6, 4.5, 5.15, 6.8.2, 9.4, 9.5, 9.11, 10.2, 10.5, 11.2, 13.9, 13.13, 13.14, 15.1, 15.5
CONTRACTOR's fee.....	11.6
Cost of the Work	
general.....	11.4-11.7
Exclusions to	11.5
Cost Records	11.7
in general.....	1.19, 1.44, 9.11, 10.4.2, 10.4.3, 11
Lump Sum Pricing	11.3.2
Notification of Surety.....	10.5
Scope of	10.3-10.4
Testing and Inspection, Uncovering the Work	13.9
Unit Price Work	11.9
Value of Work.....	11.3
Change in Contract Times--	
Claim for times adjustment	4.1, 4.2.6, 4.5, 5.15, 6.8.2, 9.4, 9.5, 9.11, 10.2, 10.5, 12.1, 13.9, 13.13, 13.14, 14.7, 15.1, 15.5
Contractual time limits	12.2
Delays beyond CONTRACTOR's control.....	12.3
Delays beyond OWNER's and CONTRACTOR's	
control	12.4
Notification of surety.....	10.5
Scope of change	10.3-10.4
Change Orders--	
Acceptance of Defective Work.....	13.13
Amending Contract Documents	3.5
Cash Allowances.....	11.8
Change of Contract Price.....	11
Change of Contract Times.....	12
Changes in the Work	10
CONTRACTOR's fee.....	11.6
Cost of the Work	11.4-11.7
Cost Records	11.7
definition of.....	1.9
emergencies.....	6.23
ENGINEER's responsibility	9.8, 10.4, 11.2, 12.1
execution of	10.4
Indemnification	6.12, 6.16, 6.31, 6.33
Insurance, Bonds and	5.10, 5.13, 10.5
OWNER may terminate	15.2-15.4
OWNER's Responsibility	8.6, 10.4
Physical Conditions--	
Subsurface and,	4.2
Underground Facilities	4.3.2
Record Documents	6.19
Scope of Change	10.3-10.4
Substitutes	6.7.3, 6.8.2
Unit Price Work	11.9
value of Work, covered by	11.3
Changes in the Work	10
Notification of surety	10.5
OWNER's and CONTRACTOR's responsibilities	10.4
Right to an adjustment	10.2
Scope of change	10.3-10.4
Claims--	
against CONTRACTOR	6.16
against ENGINEER	6.32
against OWNER	6.32
Change of Contract Price	9.4, 11.2

*Article or Paragraph
Number*

Change of Contract Times	9.4,12.1	Reference to Standards and Specifications	
CONTRACTOR's	4, 7.1, 9.4, 9.5, 9.11, 10.2, 11.2, 11.9, 12.1, 14.8, 15.1, 15.5, 17.3	of Technical Societies	3.3
CONTRACTOR's Fee	11.6	Related Work	7.2
CONTRACTOR's liability	5.4, 6.12, 6.16, 6.31	Reporting and Resolving Discrepancies	2.5, 3.3
Cost of the Work	11.4, 11.5	Reuse of	3.7
Decisions on Disputes.....	9.11, 9.12	Supplementing	3.6
Dispute Resolution.....	16.1	Termination of ENGINEER's Employment	8.2
Dispute Resolution Agreement	16.1-16.6	Unit Price Work	11.9
ENGINEER as initial interpreter.....	9.11	variations	3.6, 6.23, 6.27
Lump Sum Pricing	11.3.2	Visits to Site, ENGINEER's	9.2
Notice of	17.3	Contract Price--	
OWNER's	9.4, 9.5, 9.11, 10.2, 11.2, 11.9, 12.1, 13.9, 13.13, 13.14, 17.3	adjustment of	3.5, 4.1, 9.4, 10.3, 11.2-11.3
OWNER's liability	5.5	Change of	11
OWNER may refuse to make payment	14.7	Decision on Disputes	9.11
Professional Fees and Court Costs Included	17.5	definition of	1.11
request for formal decision on	9.11	Contract Times--	
Substitute items	6.7.1.2	adjustment of	3.5, 4.1, 9.4, 10.3, 12
Time Extension	12.1	Change of	12.1-12.4
Time requirements	9.11, 12.1	Commencement of	2.3
Unit Price Work	11.9.3	definition of	1.12
Value of	11.3	CONTRACTOR--	
Waiver of--on Final Payment	14.14, 14.15	Acceptance of Insurance	5.14
Work Change Directive	10.2	Limited Reliance on Technical Data Authorized	4.2.2
written notice required	9.11, 11.2, 12.1	Communications	6.2, 6.9.2
Clarifications and Interpretations	3.6.3, 9.4, 9.11	Continue Work	6.29, 10.4
Clean Site	6.17	coordination and scheduling	6.9.2
Codes of Technical Society, Organization or Association	3.3.3	definition of	1.13
Commencement of Contract Times	2.3	May Stop Work or Terminate	15.5
Communications--		provide site access to others	7.2, 13.2
general	6.2, 6.9.2, 8.1	Safety and Protection	4.3, 1.2, 6.16, 6.18, 6.21-6.23, 7.2, 13.2
Hazard Communication Programs	6.22	Shop Drawing and Sample Review Prior to Submittal	6.25
Completion--		Stop Work requirements	4.5.2
Final Application for Payment	14.12	CONTRACTOR's--	
Final Inspection	14.11	Compensation	11.1-11.2
Final Payment and Acceptance	14.13-14.14	Continuing Obligation	14.15
Partial Utilization	14.10	Defective Work	9.6, 13.10-13.14
Substantial Completion	1.38, 14.8-14.9	Duty to correct defective Work	13.11
Waiver of Claims	14.15	Duty to Report--	
Computation of Times	17.2.1-17.2.2	Changes in the Work caused by	
Concerning Subcontractors,		Emergency	6.23
Suppliers and Other	6.8-6.11	Defects in Work of Others	7.3
Conferences--		Differing conditions	4.2.3
initially acceptable schedules	2.9	Discrepancy in Documents	2.5, 3.3.2, 6.14.2
preconstruction	2.8	Underground Facilities not indicated	4.3.2
Conflict, Error, Ambiguity, Discrepancy--		Emergencies	6.23
CONTRACTOR to Report.....	2.5, 3.3.2	Equipment and Machinery Rental, Cost	
Construction, before starting by CONTRACTOR.....	2.5-2.7	of the Work	11.4.5.3
Construction Machinery, Equipment, Etc.....	6.4	Fee--Cost-Plus	11.4.5.6, 11.5.1, 11.6
Continuing the Work	6.29, 10.4	General Warranty and Guarantee	6.30
Contract Documents--		Hazard Communication Programs	6.22
Amending	3.5	Indemnification	6.12, 6.16, 6.31-6.33
Bonds	5.1	Inspection of the Work	7.3, 13.4
Cash Allowances	11.8	Labor, Materials and Equipment	6.3-6.5
Change of Contract Price.....	11	Laws and Regulations, Compliance by	6.14.1
Change of Contract Times	12	Liability Insurance	5.4
Changes in the Work	10.4-10.5	Notice of Intent to Appeal	9.10, 10.4
check and verify	2.5	obligation to perform and complete the Work	6.30
Clarifications and Interpretations	3.2, 3.6, 9.4, 9.11	Patent Fees and Royalties, paid for by	6.12
definition of	1.10	Performance and Other Bonds	5.1
ENGINEER as initial interpreter of	9.11	Permits, obtained and paid for by	6.13
ENGINEER as OWNER's representative	9.1	Progress Schedule	2.6, 2.8, 2.9, 6.6, 6.29, 10.4, 15.2.1
general	3	Request for formal decision on disputes	9.11
Insurance	5.3	Responsibilities--	
Intent	3.1-3.4	Changes in the Work	10.1
minor variations in the Work	3.6	Concerning Subcontractors, Suppliers and Others.....	6.8-6.11
OWNER's responsibility to furnish data	8.3	Continuing the Work	6.29, 10.4
OWNER's responsibility to make		CONTRACTOR's expense	6.7.1
prompt payment	8.3, 14.4, 14.13	CONTRACTOR's General Warranty and Guarantee	6.30
precedence	3.1, 3.3.3	CONTRACTOR's review prior to Shop Drawing or	
Record Documents	6.19	Sample Submittal	6.25
		Coordination of Work	6.9.2
		Emergencies	6.23

ENGINEER's evaluation, Substitutes or "Or-Equal" Items	6.7.3	Records	11.7
For Acts and Omissions of Others	6.9.1-6.9.2, 9.13	Cost of the Work--	
for deductible amounts, insurance	5.9	Bonds and insurance, additional	11.4.5.9
general	6, 7.2, 7.3, 8.9	Cash Discounts	11.4.2
Hazardous Communication Programs	6.22	CONTRACTOR's Fee	11.6
Indemnification	6.31-6.33	Employee Expenses	11.4.5.1
Labor, Materials and Equipment	6.3-6.5	Exclusions to	11.5
Laws and Regulations	6.14	General	11.4-11.5
Liability Insurance	5.4	Home office and overhead expenses	11.5
Notice of variation from Contract Documents	6.27	Losses and damages	11.4.5.6
Patent Fees and Royalties	6.12	Materials and equipment	11.4.2
Permits	6.13	Minor expenses	11.4.5.8
Progress Schedule	6.6	Payroll costs on changes	11.4.1
Record Documents	6.19	performed by Subcontractors	11.4.3
related Work performed prior to ENGINEER's		Records	11.7
approval of required submittals	6.28	Rentals of construction equipment and machinery	11.4.5.3
safe structural loading	6.18	Royalty payments, permits and license fees	11.4.5.5
Safety and Protection	6.20, 7.2, 13.2	Site office and temporary facilities	11.4.5.2
Safety Representative	6.21	Special Consultants, CONTRACTOR's	11.4.4
Scheduling the Work	6.9.2	Supplemental	11.4.5
Shop Drawings and Samples	6.24	Taxes related to the Work	11.4.5.4
Shop Drawings and Samples Review		Tests and Inspection	13.4
by ENGINEER	6.26	Trade Discounts	11.4.2
Site Cleanliness	6.17	Utilities, fuel and sanitary facilities	11.4.5.7
Submittal Procedures	6.25	Work after regular hours	11.4.1
Substitute Construction Methods and		Covering Work	13.6-13.7
Procedures	6.7.2	Cumulative Remedies	17.4-17.5
Substitutes and "Or-Equal" Items	6.7.1	Cutting, fitting and patching	7.2
Superintendence	6.2	Data, to be furnished by OWNER	8.3
Supervision	6.1	Day--definition of	17.2.2
Survival of Obligations	6.34	Decisions on Disputes	9.11, 9.12
Taxes	6.15	defective--definition of	1.14
Tests and Inspections	13.5	defective Work--	
To Report	2.5	Acceptance of	10.4.1, 13.13
Use of Premises	6.16-6.18, 6.30, 2.4	Correction or Removal of	10.4.1, 13.11
Review Prior to Shop Drawing or Sample Submittal	6.25	Correction Period	13.12
Right to adjustment for changes in the Work	10.2	in general	13, 14.7, 14.11
right to claim	4, 7.1, 9.4, 9.5, 9.11, 10.2, 11.2, 11.9, 12.1,	Observation by ENGINEER	9.2
	13.9, 14.8, 15.1, 15.5, 17.3	OWNER May Stop Work	13.10
Safety and Protection	6.20-6.22, 7.2, 13.2	Prompt Notice of Defects	13.1
Safety Representative	6.21	Rejecting	9.6
Shop Drawings and Samples Submittals	6.24-6.28	Uncovering the Work	13.8
Special Consultants	11.4.4	Definitions	1
Substitute Construction Methods and Procedures	6.7	Delays	4.1, 6.29, 12-3-12.4
Substitutes and "Or-Equal" Items, Expense	6.7.1, 6.7.2	Delivery of Bonds	2.1
Subcontractors, Suppliers and Others	6.8-6.11	Delivery of certificates of insurance	2.7
Supervision and Superintendence	6.1, 6.2, 6.21	Determinations for Unit Prices	9.10
Taxes, Payment by	6.15	Differing Subsurface or	
Use of Premises	6.16-6.18	Physical Conditions	
Warranties and guarantees	6.30, 6.5	Notice of	4.2.3
Warranty of Title	14.3	ENGINEER's Review	4.2.4
Written Notice Required--		Possible Contract Documents Change	4.2.6
CONTRACTOR stop Work or terminate	15.5	Possible Price and Times Adjustments	4.2.6
Reports of Differing Subsurface and Physical		Discrepancies-Reporting and Resolving	2.5, 3.3.2, 6.14.2
Conditions	4.2.3	Dispute Resolution--	
Substantial Completion	14.8	Agreement	16.1-16.6
CONTRACTORS--other	7	Arbitration	16.1-16.5
Contractual Liability Insurance	5.4.10	general	16
Contractual Times Limits	12.2	Mediation	16.6
Coordination		Dispute Resolution Agreement	16.1-16.6
CONTRACTOR's responsibility	6.9.2	Disputes, Decisions by ENGINEER	9.11-9.12
Copies of Documents	2.2	Documents--	
Correction Period	13.12	Copies of	2.2
Correction, Removal or Acceptance of		Record	6.19
Defective Work		Reuse of	3.7
in general	10.4.1, 13.10-13.14	Drawings--definition of	1.15
Acceptance of Defective Work	13.13	Easements	4.1
Correction or Removal of Defective Work	6.30, 13.11	Effective date of Agreement--definition of	1.16
Correction Period	13.12	Emergencies	6.23
OWNER May Correct Defective Work	13.14	ENGINEER--	
OWNER May Stop Work	13.10	as initial interpreter on disputes	9.11-9.12
Cost--		definition of	1.17
of Tests and Inspections	13.4	Limitations on authority and	
		responsibilities	9.13

Replacement of	8.2	Special, required by ENGINEER	9.6
Resident Project Representative	9.3	Tests and Approval	8.7, 13.3-13.4
ENGINEER's Consultant--definition of	1.18	Insurance--	
ENGINEER's--		Acceptance of, by OWNER	5.14
authority and responsibility, limitations on	9.13	Additional, required by changes	
Authorized Variations in the Work	9.5	in the Work	11.4.5.9
Change Orders, responsibility for	9.7,10, 11, 12	Before starting the Work	2.7
Clarifications and Interpretations	3.6.3, 9.4	Bonds and--in general	5
Decisions on Disputes	9.11-9.12	Cancellation Provisions	5.8
defective Work, notice of	13.1	Certificates of	2.7, 5, 5.3, 5.4.11, 5.4.13, 5.6.5, 5.8, 5.14, 9.13.4, 14.12
Evaluation of Substitute Items	6.7.3	completed operations	5.4.13
Liability	6.32, 9.12	CONTRACTOR's Liability	5.4
Notice Work is Acceptable	14.13	CONTRACTOR's objection to coverage	5.14
Observations	6.30.2, 9.2	Contractual Liability	5.4.10
OWNER's Representative	9.1	deductible amounts, CONTRACTOR's	
Payments to the CONTRACTOR,		responsibility	5.9
Responsibility for	9.9, 14	Final Application for Payment	14.12
Recommendation of Payment	14.4, 14.13	Licensed Insurers	5.3
Responsibilities--		Notice requirements, material	
Limitations on	9.11-9.13	changes	5.8, 10.50
Review of Reports on Differing Subsurface		Option to Replace	5.14
and Physical Conditions	4.2.4	other special insurances	5.10
Shop Drawings and Samples, review		OWNER as fiduciary for insured	5.12-5.13
responsibility	6.26	OWNER's Liability	5.5
Status During Construction--		OWNER's Responsibility	8.5
authorized variations in the Work	9.5	Partial Utilization, Property Insurance	5.15
Clarifications and Interpretations	9.4	Property	5.6-5.10
Decisions on Disputes	9.11-9.12	Receipt and Application of Insurance Proceeds	5.12-5.13
Determination on Unit Price	9.10	Special Insurance	5.10
ENGINEER as Initial Interpreter	9.11-9.12	Waiver of Rights	5.11
ENGINEER's Responsibilities	9.1-9.12	Intent of Contract Documents	3.1-3.4
Limitations on ENGINEER's Authority and		Interpretations and Clarifications	3.6.3, 9.4
Responsibilities	9.13	Investigations of physical conditions	4.2
OWNER's Representative	9.1	Labor, Materials and Equipment	6.3-6.5
Project Representative	9.3	Lands--	
Rejecting Defective Work	9.6	and Easements	8.4
Shop Drawings, Change Orders and		Availability of	4.1, 8.4
Payments	9.7-9.9	Reports & Tests	8.4
Visits to Site	9.2	Laws and Regulations--Laws or Regulations--	
Unit Price Determinations	9.10	Bonds	5.1-5.2
Visits to Site	9.2	Changes in the Work	10.4
Written consent required	7.2, 9.1	Contract Documents	3.1
Equipment, Labor, Materials and	6.3-6.5	CONTRACTOR's Responsibilities	6.14
Equipment rental, Cost of the Work	11.4.5.3	Correction Period, defective Work	13.12
Equivalent Materials and Equipment	6.7	Cost of the Work, taxes	11.4.5.4
Errors or omissions	6.33	definition of	1.22
Evidence of Financial Arrangements	8.11	general	6.14
Explorations of physical conditions	4.2.1	Indemnification	6.31-6.33
Fee, CONTRACTOR's--Costs-Plus	11.6	Insurance	5.3
Field Order--		Precedence	3.1, 3.3.3
definition of	1.19	Reference to	3.3.1
issued by ENGINEER	3.6.1, 9.5	Safety and Protection	6.20, 13.2
Final Application for Payment	14.12	Subcontractors, Suppliers and Others	6.8-6.11
Final Inspection	14.11	Tests and Inspections	13.5
Final Payment--		Use of Premises	6.16
and Acceptance	14.13-14.14	Visits to Site	9.2
Prior to, for cash allowances	11.8	Liability Insurance--	
General Provisions	17.3-17.4	CONTRACTOR's	5.4
General Requirements--		OWNER's	5.5
definition of	1.20	Licensed Sureties and Insurers	5.3
principal references to	2.6, 6.4, 6.6-6.7, 6.24	Liens--	
Giving Notice	17.1	Application for Progress Payment	14.2
Guarantee of Work--by		Contractor's Warranty of Title	14.3
CONTRACTOR	6.30, 14.12	Final Application for Payment	14.12
Hazard Communication Programs	6.22	definition of	1.23
Hazardous Waste--		Waiver of Claims	14.15
definition of	1.21	Limitations on ENGINEER's authority and	
general	4.5	responsibilities	9.13
OWNER's responsibility for	8.10	Limited Reliance by CONTRACTOR Authorized	4.2.2
Indemnification	6.12, 6.16, 6.31-6.33	Maintenance and Operating Manuals--	
Initially Acceptable Schedules	2.9	Final Application for Payment	14.12
Inspection--		Manuals (of others)--	
Certificates of	9.13.4, 13.5, 14.12	Precedence	3.3.3.1
Final	14.11		

Reference to in Contract Documents	3.3.1	lands and easements	8.4
Materials and equipment--		prompt payment by	8.3
furnished by CONTRACTOR	6.3	replacement of ENGINEER	8.2
not incorporated in Work	14.2	reports and tests	8.4
Materials or equipment--equivalent	6.7	stop or suspend Work	8.8, 13.10, 15.1
Mediation (Optional)	16.7	terminate CONTRACTOR's services	8.8, 15.2
Milestones--definition of	1.24	separate representative at site	9.3
Miscellaneous--		independent testing	13.4
Computation of Times	17.2	use or occupancy of the Work	5.15, 14.10
Cumulative Remedies	17.4	written consent or approval required	9.1, 6.3, 11.4
Giving Notice	17.1	written notice required	7.1, 9.4, 9.11, 11.2, 11.9, 14.7, 15.4
Notice of Claim	17.3	PCBs--	
Professional Fees and Court Costs Included	17.5	definition of	1.29
Multi-prime contracts	7	general	4.5
Not Shown or Indicated	4.3.2	OWNER's responsibility for	8.10
Notice of--		Partial Utilization--	
Acceptability of Project	14.13	definition of	1.29
Award, definition of	1.25	general	6.30.2.4, 14.10
Claim	17.3	Property Insurance	5.15
Defects	13.1	Patent Fees and Royalties	6.12
Differing Subsurface or Physical Conditions	4.2.3	Payment Bonds	5.1-5.2
Giving	17.1	Payments, Recommendation of	14.4-14.7, 14.13
Tests and Inspections	13.3	Payments to CONTRACTOR and Completion--	
Variation, Shop Drawing and Sample	6.27	Application for Progress Payments	14.2
Notice to Proceed--		CONTRACTOR's Warranty of Title	14.3
definition of	1.26	Final Application for Payment	14.12
giving of	2.3	Final Inspection	14.11
Notification to Surety	10.5	Final Payment and Acceptance	14.13-14.14
Observations, by ENGINEER	6.30, 9.2	general	8.3, 14
Occupancy of the Work	5.15, 6.30.2.4, 14.10	Partial Utilization	14.10
Omissions or acts by CONTRACTOR	6.9, 9.13	Retainage	14.2
"Open peril" policy form, Insurance	5.6.2	Review of Applications for Progress	
Option to Replace	5.14	Payments	14.4-14.7
"Or Equal" Items	6.7	prompt payment	8.3
Other work	7	Schedule of Values	14.1
Overtime Work--prohibition of	6.3	Substantial Completion	14.8-14.9
OWNER--		Waiver of Claims	14.15
Acceptance of defective Work	13.13	when payments due	14.4, 14.13
appoint an ENGINEER	8.2	withholding payment	14.7
as fiduciary	5.12-5.13	Performance Bonds	5.1-5.2
Availability of Lands, responsibility	4.1	Permits	6.13
definition of	1.27	Petroleum--	
data, furnish	8.3	definition of	1.30
May Correct Defective Work	13.14	general	4.5
May refuse to make payment	14.7	OWNER's responsibility for	8.10
May Stop the Work	13.10	Physical Conditions--	
may suspend work,		Drawings of, in or relating to	4.2.1.2
terminate	8.3, 13.10, 15.1-15.4	ENGINEER's review	4.2.4
Payment, make prompt	8.3, 14.4, 14.13	existing structures	4.2.2
performance of other Work	7.1	general	4.2.1.2
permits and licenses, requirements	6.13	Subsurface and,	4.2
purchased insurance requirements	5.6-5.10	Underground Facilities	4.3
OWNER's--		Possible Contract Documents Change	4.2.5
Acceptance of the Work	6.30.2.5	Possible Price and Times Adjustments	4.2.6
Change Orders, obligation to		Reports and Drawings	4.2.1
execute	8.6, 10.4	Notice of Differing Subsurface or,	4.2.3
Communications	8.1	Subsurface and	4.2
Coordination of the Work	7.4	Subsurface Conditions	4.2.1.1
Disputes, request for decision	9.11	Technical Data, Limited Reliance by	
Inspections, tests and approvals	8.7, 13.4	CONTRACTOR Authorized	4.2.2
Liability Insurance	5.5	Underground Facilities--	
Notice of Defects	13.1	general	4.3
Representative-- During Construction,		Not Shown or Indicated	4.3.2
ENGINEER's Status	9.1	Protection of	4.3, 6.20
Responsibilities--		Shown or Indicated	4.3.1
Asbestos, PCB's, Petroleum, Hazardous		Technical Data	4.2.2
Waste on Radioactive Material	8.10	Preconstruction Conference	2.8
Change Orders	8.6	Preliminary Matters	2
Changes in the Work	10.1	Preliminary Schedules	2.6
communications	8.1	Premises, Use of	6.16-6.18
CONTRACTOR's responsibilities	8.9	Price, Change of Contract	11
evidence of financial arrangements	8.11	Price, Contract--definition of	1.11
inspections, tests and approvals	8.7	Progress Payment, Applications for	14.2
Insurance	8.5	Progress payment--retainage	14.2

Progress schedule, CONTRACTOR's`	2.6, 2.8, 2.9, 6.6, 6.29, 10.4, 15.2.1	Schedule of Shop Drawing and Sample Submittals	2.6, 2.8-2.9, 6.24-6.28
Project--definition of	1.31	Schedule of Values	2.6, 2.8-2.9, 14.1
Project Representative-- ENGINEER's Status During Construction	9.3	Schedules-- Adherence to	15.2.1
Project Representative, Resident --definition of	1.33	Adjusting	6.6
prompt payment by OWNER	8.3	Change of Contract Times	10.4
Property Insurance Additional	5.7	Initially Acceptable	2.8-2.9
general	5.6-5.10	Preliminary	2.6
Partial Utilization	5.15, 14.10.2	Scope of Changes	10.3-10.4
receipt and application of proceeds	5.12-5.13	Subsurface Conditions	4.2.1.1
Protection, Safety and	6.20-6.21, 13.2	Shop Drawings-- and Samples, general	6.24-6.28
Punch list	14.11	Change Orders & Applications for Payments, and	9.7-9.9
Radioactive Material-- definition	1.32	definition of	1.35
general	4.5	ENGINEER's approval of	3.6.2
OWNER's responsibility for	8.10	ENGINEER's responsibility for review	9.7, 6.24-6.28
Recommendation of Payment	14.4, 14.5, 14.13	related Work	6.28
Record Documents	6.19, 14.12	review procedures	2.8, 6.24-6.28
Records, procedures for maintaining	2.8	submittal required	6.24.1
Reference Points	4.4	Submittal Procedures	6.25
Reference to Standards and Specifications of Technical Societies	3.3	use to approve substitutions	6.7.3
Regulations, Laws and (or)	6.14	Shown or Indicated	4.3.1
Rejecting Defective Work	9.6	Site Access	7.2, 13.2
Related Work-- at Site	7.1-7.3	Site Cleanliness	6.17
Performed prior to Shop Drawings and Samples submittals review	6.28	Site, Visits to-- by ENGINEER	9.2, 13.2
Remedies, cumulative	17.4, 17.5	by others	13.2
Removal or Correction of Defective Work	13.11	"Special causes of loss" policy form, insurance	5.6.2
rental agreements, OWNER approval required	11.4.5.3	Specifications-- definition of	1.36
replacement of ENGINEER, by OWNER	8.2	of Technical Societies, reference to	3.3.1
Reporting and Resolving Discrepancies	2.5, 3.3.2, 6.14.2	precedence	3.3.3
Reports-- and Drawings	4.2.1	Standards and Specifications of Technical Societies	3.3
and Tests, OWNER's responsibility	8.4	Starting Construction, Before	2.5-2.8
Resident Project Representative-- definition of	1.33	Starting the Work	2.4
provision for	9.3	Stop or Suspend Work-- by CONTRACTOR	15.5
Resident superintendent, CONTRACTOR's	6.2	by OWNER	8.8, 13.10, 15.1
Responsibilities-- CONTRACTOR's-in general	6	Storage of materials and equipment	4.1, 7.2
ENGINEER's-in general	9	Structural Loading, Safety	6.18
Limitations on	9.13	Subcontractor-- Concerning	6.8-6.11
OWNER's-in general	8	definition of	1.37
Retainage	14.2	delays	12.3
Reuse of Documents	3.7	waiver of rights	6.11
Review by CONTRACTOR: Shop Drawings and Samples Prior to Submittal	6.25	Subcontractors--in general	6.8-6.11
Review of Applications for Progress Payments	14.4-14.7	Subcontracts--required provisions	5.11, 6.11, 11.4.3
Right to an adjustment	10.2	Submittals-- Applications for Payment	14.2
Rights of Way	4.1	Maintenance and Operation Manuals	14.12
Royalties, Patent Fees and	6.12	Procedures	6.25
Safe Structural Loading	6.18	Progress Schedules	2.6, 2.9
Safety-- and Protection	4.3.2, 6.16, 6.18, 6.20-6.21, 7.2, 13.2	Samples	6.24-6.28
general	6.20-6.23	Schedule of Values	2.6, 14.1
Representative, CONTRACTOR's	6.21	Schedule of Shop Drawings and Samples Submissions	2.6, 2.8-2.9
Samples-- definition of	1.34	Shop Drawings	6.24-6.28
general	6.24-6.28	Substantial Completion-- certification of	6.30.2.3, 14.8-14.9
Review by CONTRACTOR	6.25	definition of	1.38
Review by ENGINEER	6.26, 6.27	Substitute Construction Methods or Procedures	6.7.2
related Work	6.28	Substitutes and "Or-Equal" Items	6.7
submittal of	6.24.2	CONTRACTOR's Expense	6.7.1.3
submittal procedures	6.25	ENGINEER's Evaluation	6.7.3
Schedule of progress	2.6, 2.8-2.9, 6.6, 6.29, 10.4, 15.2.1	"Or-Equal"	6.7.1
		Substitute Construction Methods of Procedures	6.7.2
		Substitute Items	6.7.1.2
		Subsurface and Physical Conditions-- Drawings of, in or relating to	4.2.1.2
		ENGINEER's Review	4.2.4

general	4.2	Milestones	12
Limited Reliance by CONTRACTOR		Requirements--	
Authorized	4.2.2	appeals	16
Notice of Differing Subsurface or		clarifications, claims and	
Physical Conditions	4.2.3	disputes	9.11, 11.2, 12
Physical Conditions	4.2.1.2	commencement of contract times	2.3
Possible Contract Documents Change	4.2.5	preconstruction conference	2.8
Possible Price and Times Adjustments	4.2.6	schedules	2.6, 2.9, 6.6
Reports and Drawings	4.2.1	starting the Work	2.4
Subsurface and	4.2	Title, Warranty of	14.3
Subsurface Conditions at the Site	4.2.1.1	Uncovering Work	13.8-13.9
Technical Data	4.2.2	Underground Facilities, Physical Conditions--	
Supervision--		definition of	1.41
CONTRACTOR's responsibility	6.1	Not Shown or Indicated	4.3.2
OWNER shall not supervise	8.9	protection of	4.3, 6.20
ENGINEER shall not supervise	9.2, 9.13.2	Shown or Indicated	4.3.1
Superintendence	6.2	Unit Price Work--	
Superintendent, CONTRACTOR's resident	6.2	claims	11.9.3
Supplementary costs	11.4.5	definitions of	1.42
Supplementary Conditions--		general	11.9, 14.1, 14.5
definition of	1.39	Unit Prices--	
principal reference to	1.10, 1.18, 2.2, 2.7, 4.2, 4.3, 5.1	general	11.3.1
5.3, 5.4, 5.6-5.9, 5.11 6.8, 6.13, 7.4, 8.11, 9.3, 9.10		Determination for	9.10
Supplementing Contract Documents	3.6	Use of Premises	6.16, 6.18, 6.30.2.4
Supplier--		Utility owners	6.13, 6.20, 7.1-7.3, 13.2
definition of	1.40	Utilization, Partial	1.28, 5.15, 6.30, 2.4, 14.10
principal references to	3.7, 6.5, 6.8-6.11,	Value of the Work	11.3
6.20, 6.24, 9.13, 14.12		Values, Schedule of	2.6, 2.8-2.9, 14.1
Waiver of Rights	6.11	Variations in Work--Minor	
Surety--		Authorized	6.25, 6.27, 9.5
consent to final payment	14.12, 14.14	Visits of Site--by ENGINEER	9.2
ENGINEER has no duty to	9.13	Waiver of Claims--on Final	
Notification of	10.1, 10.5, 15.2	Payment	14.15
qualification of	5.1-5.3	Waiver of Rights by insured parties	5.11, 6.11
Survival of Obligations	6.34	Warranty and Guarantee, General--by	
Suspend Work, OWNER May	13.10, 15.1	CONTRACTOR	6.30
Suspension of Work and Termination--	15	Warranty of Title, CONTRACTOR's	14.3
CONTRACTOR May Stop Work or		Work--	
Terminate	15.5	Access to	13.2
OWNER May Suspend Work	15.1	by others	7
OWNER May Terminate	15.2-15.4	Changes in the	10
Taxes--Payment by CONTRACTOR	6.15	Continuing the,	6.29
Technical Data--		CONTRACTOR May Stop Work	
Limited Reliance by CONTRACTOR	4.2.2	or Terminate	15.5
Possible Price and Times Adjustments	4.2.6	Coordination of	7.4
Reports of Differing Subsurface and		Costs of the	11.4-11.5
Physical Conditions	4.2.3	definition of	1.43
Temporary construction facilities	4.1	neglected by CONTRACTOR	13.14
Termination--		other Work	7
by CONTRACTOR	15.5	OWNER May Stop Work	13.10
by OWNER	8.8, 15.1-15.4	OWNER May Suspend Work	13.10, 15.1
of ENGINEER's employment	8.2	Related, Work at Site	7.1-7.3
Suspension of Work-in general	15	Starting the	2.4
Terms and Adjectives	3.4	Stopping by CONTRACTOR	15.5
Tests and Inspections--		Stopping by OWNER	15.1-15.4
Access to the Work, by others	13.2	Variation and deviation authorized,	
CONTRACTOR's responsibilities	13.5	minor	3.6
cost of	13.4	Work Change Directive--	
covering Work prior to	13.6-13.7	claims pursuant to	10.2
Laws and Regulations (or)	13.5	definition of	1.44
Notice of Defects	13.1	principal references to	3.5.3, 10.1-10.2
OWNER May Stop Work	13.10	Written Amendment--	
OWNER's independent testing	13.4	definition of	1.45
special, required by ENGINEER	9.6	principal references to	1.10, 3.5, 5.10, 5.12, 6.6.2, 6.8.2,
timely notice required	13.4	6.19, 10.1, 10.4, 11.2, 12.1, 13.12.2, 14.7.2	
Uncovering the Work, at ENGINEER's		Written Clarifications and	
request	13.8-13.9	Interpretations	3.6.3, 9.4, 9.11
Times--		Written Notice Required--	
Adjusting	6.6	by CONTRACTOR	7.1, 9.10--9.11, 10.4, 11.2, 12.1
Change of Contract	12	by OWNER	9.10-9.11, 10.4, 11.2, 13.14
Adjusting	6.6		
Computation of	17.2		
Contract Times--definition of	1.12		
day	17.2		

GENERAL CONDITIONS

ARTICLE 1--DEFINITIONS

Wherever used in these General Conditions or in the other Contract

Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

1.1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Bidding Requirements or the Contract Documents.

1.2. *Agreement*--The written contract between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3. *Application for Payment*--The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

1.4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

1.5. *Bid*--The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.6. *Bidding Documents*--The advertisement or invitation to Bid, instructions to bidders, the Bid form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

1.7. *Bidding Requirements*--The advertisement or invitation to Bid, instructions to bidders, and the Bid form.

1.8. *Bonds*--Performance and Payment bonds and other instruments of security.

1.9. *Change Order*--A document recommended by 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 Agreement.

1.10. *Contract Documents*--The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders and ENGINEER's written interpretations and classifications issued pursuant to paragraphs 3.5, 3.6.1, and 3.6.3 on or after the Effective Date of the Agreement. Shop Drawing submittals approved pursuant to paragraphs 6.26 and 6.27 and the reports and drawings referred to in paragraphs 4.2.1.1 and 4.2.2.2 are not Contract Documents.

1.11. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price Work).

1.12. *Contract Times*--The numbers of days or the dates stated in the Agreement: (i) to achieve Substantial Completion, and (ii) to complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.13.

1.13. *CONTRACTOR*--The person, firm or corporation with whom the OWNER has entered into the Agreement.

1.14. *defective*--An adjective which 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 ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.8 or 14.10).

1.15. *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 ENGINEER and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.

1.16. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

1.17. *ENGINEER*--The person, firm or corporation named as such in the Agreement.

1.18. *ENGINEER's Consultant*--A person, firm, or corporation having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

1.19. *Field Order*--A written order issued by ENGINEER which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or the Contract Times.

1.20. *General Requirements*--Sections of Division 1 of the Specifications.

1.21. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

1.22. *Laws and Regulations: Laws 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.

1.23. *Liens*--Liens, charges, security interests or encumbrances upon real property or personal property.

1.24. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

1.25. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.26. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.

1.27. *OWNER*--The public body or authority, corporation, association, firm or person with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided.

1.28. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

1.29. *PCBs*--Polychlorinated biphenyls.

1.30. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.

1.31. *Project*--The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.32. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

1.33. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the site or any part thereof.

1.34. *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.

1.35. *Shop Drawings*--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.

1.36. *Specifications*--Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

1.37. *Subcontractor*--An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.38. *Substantial Completion*--The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by ENGINEER's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

1.39. *Supplementary Conditions*--The part of the Contract Documents which amends or supplements these General Conditions.

1.40. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman 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.

1.41. *Underground Facilities*--All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.42. *Unit Price Work*--Work to be paid for on the basis of unit prices.

1.43. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

1.44. *Work Change Directive*--A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.23. A Work Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times as provided in paragraph 10.2.

1.45. *Written Amendment*--A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

ARTICLE 2--PRELIMINARY MATTERS

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds

as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2. OWNER shall furnish to CONTRACTOR up to ten copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Times; Notice to Proceed:

2.3. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

Starting the Work:

2.4. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run, but no Work shall be done at the site prior to the date on which the Contract Times commence to run.

Before Starting Construction:

2.5. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents, unless CONTRACTOR knew or reasonably should have known thereof.

2.6. Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for review:

2.6.1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2.6.2. a preliminary schedule for Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing and processing such submittal;

2.6.3. a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.7. Before any Work at the site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with paragraphs 5.4, 5.6 and 5.7.

Preconstruction Conference:

2.8. Within twenty days after the Contract Times start to run, but before any Work at the site is started, a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.6, procedures for handling Shop Drawings and other submittals, processing Applications for Payment and maintaining required records.

Initially Acceptable Schedules:

2.9. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.6. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until the schedules are submitted to and acceptable to ENGINEER as provided below. The progress schedule will be acceptable to ENGINEER as providing an orderly progression of the Work to completion within any specified Milestones and the Contract Times, but such acceptance will neither impose on ENGINEER responsibility for the sequencing, scheduling or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefore. CONTRACTOR's schedule of Shop Drawing and Sample submissions will be acceptable to ENGINEER as providing a workable arrangement for reviewing and processing the required submittals. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance.

ARTICLE 3--CONTRACT DOCUMENT: INTENT,
AMENDING, REUSE

Intent:

3.1. The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically called for. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe Work, materials or equipment, such words or phrases shall be interpreted in accordance with that meaning. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 9.4.

3.3. Reference to Standards and Specifications of Technical Societies; Reporting and Resolving Discrepancies:

3.3.1. Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

3.3.2. 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 such Law or Regulation applicable to the performance of the Work or of any such standard, specification, manual or code or of any instruction of any Supplier referred to in paragraph 6.5, CONTRACTOR shall report it to ENGINEER in writing at once, and, CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by paragraph 6.23) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.5 or 3.6; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

3.3.3. Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement thereto issued by one of the methods indicated in paragraph 3.5 or 3.6, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and:

3.3.3.1. the provisions of any such standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

3.3.3.2. the provisions of any such 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).

No provision of any such standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or 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, ENGINEER or any of ENGINEER's Consultants, agents or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.13 or any other provision of the Contract Documents.

3.4. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as approved" or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment 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 ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.13 or any other provision of the Contract Documents.

Amending and Supplementing Contract Documents:

3.5. 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:

3.5.1. a formal Written Amendment.

3.5.2. a Change Order (pursuant to paragraph 10.4), or

3.5.3. a Work Change Directive (pursuant to paragraph 10.1).

3.6. In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

3.6.1. a Field Order (pursuant to paragraph 9.5),

3.6.2. ENGINEER's approval of a Shop Drawing or Sample (pursuant to paragraphs 6.26 and 6.27), or

3.6.3. ENGINEER's written interpretation or clarification (pursuant to paragraph 9.4).

Reuse of Documents:

3.7. CONTRACTOR, and any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER (i) 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 ENGINEER or ENGINEER's Consultant, and (ii) shall not reuse any of such Drawings, Specifications, other documents or copies on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER.

ARTICLE 4--AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

Availability of Lands:

4.1. OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a correct 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 lien against such lands in accordance with applicable Laws and Regulations. OWNER shall identify any encumbrances or restrictions not of general application but

specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR and OWNER are unable to agree on entitlement to or the amount or extent of any adjustments in the Contract Price or the Contract Times as a result of any delay in OWNER's furnishing these lands, rights-of-way or easements, CONTRACTOR may make a claim therefore as provided in Articles 11 and 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2. *Subsurface and Physical Conditions:*

4.2.1. *Reports and Drawings:* Reference is made to the Supplementary Conditions for identification of:

4.2.1.1. *Subsurface Conditions:* Those reports of explorations and tests of subsurface conditions at or contiguous to the site that have been utilized by ENGINEER in preparing the Contract Documents; and

4.2.1.2. *Physical Conditions:* Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) that have been utilized by ENGINEER in preparing the Contract Documents.

4.2.2. *Limited Reliance by CONTRACTOR Authorized: Technical Data:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data." CONTRACTOR may not rely upon or make any claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

4.2.2.1. 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

4.2.2.2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings, or

4.2.2.3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions or information.

4.2.3. *Notice of Differing Subsurface or Physical Conditions:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the site that is uncovered or revealed either:

4.2.3.1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is materially inaccurate, or

4.2.3.2. is of such a nature as to require a change in the Contract Documents, or

4.2.3.3. differs materially from that shown or indicated in the Contract Documents, or

4.2.3.4. 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, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as permitted by paragraph 6.23), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such conditions or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

4.2.4. *ENGINEER's Review:* ENGINEER will promptly review the pertinent conditions, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

4.2.5. *Possible Contract Documents Change:* If ENGINEER concludes that a change in the Contract Documents is required as a result of a condition that meets one or more of the categories in paragraph 4.2.3., a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document the consequences of such change.

4.2.6. *Possible Price and Times Adjustments:* An equitable adjustment in the Contract Price or in the Contract Times, or both, will be allowed to the extent that the existence of such uncovered or revealed condition causes an increase or decrease in CONTRACTOR's cost of, or time required for performance of, the Work; subject, however, to the following:

4.2.6.1. such condition must meet any one or more of the categories described in paragraphs 4.2.3.1 through 4.2.3.4, inclusive;

4.2.6.2. a change in the Contract Documents pursuant to paragraph 4.2.5 will not be an automatic authorization of nor a condition precedent to entitlement to any such adjustment;

4.2.6.3. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.10 and 11.9; and

4.2.6.4. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Times if;

4.2.6.4.1. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a bid or becoming bound under a negotiated contract; or

4.2.6.4.2. 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 CONTRACTOR's making such final commitment; or

4.2.6.4.3. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.2.3.

If OWNER and CONTRACTOR are unable to agree on entitlement to or as to the amount or length of any such equitable adjustment in the Contract Price or Contract Times, a claim may be made therefore as provided in Articles 11 and 12. However, OWNER, ENGINEER and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.3. Physical Conditions--Underground Facilities:

4.3.1. *Shown or Indicated:* 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 ENGINEER by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

4.3.1.2. The cost of all of the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for: (i) reviewing and checking all such information and data, (ii) locating all Underground Facilities shown or indicated in the Contract Documents, (iii) coordination of the Work with the owners of such Underground Facilities during construction, and (iv) the safety and protection of all such Underground Facilities as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work.

4.3.2. *Not Shown or Indicated:* If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents, CONTRACTOR shall, promptly 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 paragraph 6.23), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence of the Underground Facility. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document such consequences. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or the amount or length of any such adjustment in Contract Price or Contract Times, CONTRACTOR may make a claim therefore as provided in Articles 11 and 12. However, OWNER, ENGINEER and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages incurred or sustained by CONTRACTOR on or in connection with any other project or anticipated project.

Reference Points:

4.4. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

4.5. Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material:

4.5.1. OWNER shall be responsible for any Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. OWNER shall not be responsible for any such materials brought to the site by CONTRACTOR, Subcontractor, Suppliers or anyone else for whom CONTRACTOR is responsible.

4.5.2. CONTRACTOR shall immediately: (i) stop all Work in connection with such hazardous condition and in any area affected thereby (except in an emergency as required by paragraph 6.23), and (ii) notify OWNER and ENGINEER (and thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such hazardous condition or take corrective action, if any. CONTRACTOR shall not be required to resume Work in connection with such hazardous condition or in any such affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of such Work stoppage or such special conditions under which Work is agreed by CONTRACTOR to be resumed, either party may make a claim therefore as provided in Articles 11 and 12.

4.5.3. If after receipt of such special written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order such portion of the Work that is in connection with such hazardous condition or in such affected area to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, 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 Articles 11 and 12. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

4.5.4. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents, other consultants and subcontractors of each and any of them from and against all

claims, costs, losses and damages arising out of or resulting from such hazardous condition, provided that: (i) 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 there from, and (ii) nothing in this subparagraph 4.5.4 shall obligate OWNER to indemnify any person or entity from and against the consequences of that person's or entity's own negligence.

4.5.5. The provisions of paragraphs 4.2 and 4.3 are not intended to apply to Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site.

ARTICLE 5--BONDS AND INSURANCE

Performance, Payment and Other Bonds:

5.1. CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

5.2. If the surety on any Bond furnished by CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1, CONTRACTOR shall within ten days thereafter substitute another Bond and surety, both of which must be acceptable to OWNER.

5.3. Licensed Sureties and Insurers; Certificates of Insurance:

5.3.1. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.3.2. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain in accordance with paragraph 5.4. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is

required to purchase and maintain in accordance with paragraphs 5.6 and 5.7 hereof.

CONTRACTOR's Liability Insurance:

5.4. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance and furnishing of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed or furnished by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable:

5.4.1. claims under workers' compensation, disability benefits and other similar employee benefit acts;

5.4.2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

5.4.3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

5.4.4. claims for damages insured by customary personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5.4.5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting there from; and

5.4.6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The policies of insurance so required by this paragraph 5.4 to be purchased and maintained shall:

5.4.7. with respect to insurance required by paragraphs 5.4.3. through 5.4.6 inclusive, include as additional insured (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insured, and include coverage for the respective officers and employees of all such additional insured;

5.4.8. include the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

5.4.9. include completed operations insurance;

5.4.10. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.12, 6.16 and 6.31 through 6.33;

5.4.11. contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.3.2 will so provide);

5.4.12. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing *defective* Work in accordance with paragraph 13.12; and

5.4.13. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

OWNER's Liability Insurance:

5.5. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.4, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

5.6. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

5.6.1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

5.6.2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work and Work in transit and shall insure against at least the following perils fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils as may be specifically required by the Supplementary Conditions;

5.6.3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

5.6.4. cover materials and equipment stored at the site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER; and

5.6.5. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR and ENGINEER with thirty days written notice to each other additional insured to whom a certificate of insurance has been issued.

5.7. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

5.8. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained by OWNER in accordance with paragraphs 5.6 and 5.7 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least thirty days' prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.11.

5.9. OWNER shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR, Subcontractors or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount, will be borne by CONTRACTOR, Subcontractor or others suffering any such loss and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.10. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraphs 5.6 or 5.7, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.11. Waiver of Rights:

5.11.1. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraphs 5.6 and 5.7 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds in such policies and will provide primary coverage for all losses and damages caused by the perils covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, employees and agents for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds under such policies for losses and damages so caused. None of the above waivers shall extend to the

rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

5.11.2. In addition, OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER'S Consultants and the officers, directors, employees and agents of any of them, for:

5.11.2.1. loss due to business interruption, loss of use or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of or resulting from fire or other peril, whether or not insured by OWNER; and

5.11.2.2. loss or damage to the completed Project or part thereof caused by, arising out of or resulting from fire or other insured peril covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.10, after substantial completion pursuant to paragraph 14.8 or after final payment pursuant to paragraph 14.13.

Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in this paragraph 5.11.2 shall contain provisions to the effect that in the event of payment of any such loss, damage or consequential loss the insurers will have no rights of recovery against any of CONTRACTOR, Subcontractors, ENGINEER, ENGINEER'S Consultants and the officers, directors, employees and agents of any of them.

Receipt and Application of Insurance Proceeds

5.12. Any insured loss under the policies of insurance required by paragraphs 5.6 and 5.7 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.13. OWNER shall deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

5.13. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

Acceptance of Bonds and Insurance; Option to Replace;

5.14. If either party (OWNER or CONTRACTOR) has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.7. OWNER and

CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

Partial Utilization--Property Insurance:

5.15. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be cancelled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6--CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1. CONTRACTOR shall supervise, inspect and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or specification of a specific means, method, technique, sequence or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment:

6.3. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except as otherwise required for the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER's written consent given after prior written notice to ENGINEER.

6.4. Unless otherwise specified in the General Requirements, CONTRACTOR shall furnish and assume full responsibility for all 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 furnishing, performance, testing, start-up and completion of the Work.

6.5. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

Progress Schedule:

6.6. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.9 as it may be adjusted from time to time as provided below:

6.6.1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.9) proposed adjustments in the progress schedule that will not change the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

6.6.2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of paragraph 12.1. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.7. Substitutes and "Or-Equal" Items:

6.7.1. 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 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, other items of material or equipment or material or equipment of other Suppliers may be accepted by ENGINEER under the following circumstances:

6.7.1.1. *"Or-Equal"*: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.

6.7.1.2. *Substitute Items*: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under

subparagraph 6.7.1.1., it will be considered a proposed substitute item. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. The procedure for review by the ENGINEER will include the following as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall first make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute.

6.7.1.3. *CONTRACTOR's Expense*: All data to be provided by CONTRACTOR in support of any proposed "or-equal" or substitute item will be at CONTRACTOR's expense.

6.7.2. *Substitute Construction Methods or Procedures*: If a specific means, method, technique, sequence or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.7.1.2.

6.7.3. *Engineer's Evaluation*: ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.7.1.2 and 6.7.2. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any "or-equal" or substitute. ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in

evaluating substitutes proposed or submitted by CONTRACTOR pursuant to paragraphs 6.7.1.2 and 6.7.2 and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER accepts a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute item.

Concerning Subcontractors, Suppliers and Others:

6.8.1. CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

6.8.2. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organization (including those who are to furnish the principal items of materials or equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and ENGINEER, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's or ENGINEER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be removed on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute, the Contract Price will be adjusted by the difference in the cost occasioned by such substitution and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject *defective* Work.

6.9.1. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between OWNER and ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.9.2. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with the ENGINEER through CONTRACTOR.

6.10. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.11. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate 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 for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.6 or 5.7, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants and all other additional insureds for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

Patent Fees and Royalties:

6.12. 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 the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER 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, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from 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.

Permits:

6.13. Unless otherwise provided in the Supplementary Conditions, 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 governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

Laws and Regulations:

6.14.1. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

6.14.2. 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 caused by, arising out of or resulting there from; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR or CONTRACTOR's obligations under paragraph 3.3.2.

Taxes:

6.15. CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

Use of Premises:

6.16. CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises 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. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant and anyone directly or indirectly employed by any of them from and against all claims, costs, losses and damages arising out of or resulting from any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

6.17. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials. CONTRACTOR shall leave the site clean and ready for occupancy by OWNER at Substantial Completion of the Work. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18. 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.

Record Documents:

6.19. CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all

approved Samples and a counter part of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples and Shop Drawings will be delivered to ENGINEER for OWNER.

Safety and Protection:

6.20. CONTRACTOR shall be 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:

6.20.1. all persons on the Work site or who may be affected by the Work;

6.20.2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

6.20.3. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish 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 Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or 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 person or organization 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 ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.13 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

Safety Representative:

6.21. 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.

Hazard Communication Program:

6.22. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with Laws or Regulations.

Emergencies:

6.23. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or ENGINEER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If 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 to document the consequences of such action.

6.24. Shop Drawings and Samples:

6.24.1. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the accepted schedule of Shop Drawings and Sample submittals (see paragraph 2.9). All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show ENGINEER the materials and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.26.

6.24.2. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with said accepted schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.26. The numbers of each Sample to be submitted will be as specified in the Specifications.

6.25. Submittal Procedures:

6.25.1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

6.25.1.1. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto.

6.25.1.2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and

6.25.1.3. all information relative to CONTRACTOR's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.

CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

6.25.2. Each submittal will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

6.25.3. At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawings or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

6.26. ENGINEER will review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals accepted by ENGINEER as required by paragraph 2.9. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed project as a functioning whole as indicated by the Contract Documents. ENGINEER's review and approval will not extend to means, methods, techniques, sequences or procedures of construction (except where particular means, method, technique, sequence or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.27. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission as required by paragraph 6.25.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.25.1.

6.28. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submissions accepted by ENGINEER as required by paragraph 2.9, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

Continuing the Work:

6.29. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.30. CONTRACTOR's General Warranty and Guarantee

6.30.1. CONTRACTOR warrants and guarantees to OWNER, ENGINEER and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be *defective*. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

6.30.1.1. abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors or Suppliers; or

6.30.1.2. normal wear and tear under normal usage.

6.30.2. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will 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:

6.30.2.1. observations by ENGINEER;

6.30.2.2. recommendation of any progress or final payment by ENGINEER;

6.30.2.3. the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;

6.30.2.4. use or occupancy of the Work or any part thereof by OWNER;

6.30.2.5. any acceptance by OWNER or any failure to do so;

6.30.2.6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.13;

6.30.2.7. any inspection, test or approval by others; or

6.30.2.8. any correction of *defective* Work by OWNER.

Indemnification:

6.31. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, 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) caused by, arising out of or resulting from the performance of the Work, provided that any such claim, cost, loss or damage: (i) 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 there from, and (ii) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of a person or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such person or entity.

6.32. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them

to perform or furnish any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.31 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 such Subcontractor, Supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

6.33. The indemnification obligations of CONTRACTOR under paragraph 6.31 shall not extend to the liability of ENGINEER and ENGINEER's Consultants, officers, directors, employees or agents caused by the professional negligence errors or omissions of any of them.

Survival of Obligations:

6.34. All representatives, 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 and termination or completion of the Agreement.

ARTICLE 7--OTHER WORK

Related Work at Site:

7.1. OWNER may perform other work related to the Project at the site by OWNER's own forces, or let other direct contracts therefore which shall contain General Conditions similar to these, or have other work performed by utility owners. If the fact that such other work is to be performed was not noted in the Contract Documents, then: (i) written notice thereof will be given to CONTRACTOR prior to starting any such other work, and (ii) CONTRACTOR may make a claim therefore as provided in Articles 11 and 12 if CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the amount or extent thereof.

7.2. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the additional work with OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

7.3. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects or deficiencies in such other work that render it unavailable or unsuitable

for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure so to report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent or nonapparent defects and deficiencies in such other work.

Coordination:

7.4. If OWNER contracts with others for the performance of other work on the Project at the site, the following will be set forth in Supplementary Conditions:

7.4.1. the person, firm or corporation who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified;

7.4.2. the specific matters to be covered by such authority and responsibility will be itemized; and

7.4.3. the extent of such authority and responsibilities will be provided.

Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility in respect of such coordination.

ARTICLE 8--OWNER'S RESPONSIBILITIES

8.1. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.3. OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.4 and 14.13.

8.4. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and drawings of physical conditions in existing structures at or contiguous to the site that have been utilized by ENGINEER in preparing the Contract Documents.

8.5. OWNER's responsibilities in respect of purchasing and maintaining liability and property insurance are set forth in paragraphs 5.5 through 5.10.

8.6. OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.

8.7. OWNER's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.8. In connection with OWNER's right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.

8.9. 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 furnishing or performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.10. OWNER's responsibility in respect of undisclosed Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Materials uncovered or revealed at the site is set forth in paragraph 4.5.

8.11. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9--ENGINEER'S STATUS DURING CONSTRUCTION

OWNER's Representative:

9.1. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of 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 ENGINEER.

Visits to Site:

9.2. ENGINEER will make visits to the site at intervals appropriate to the various stages of construction as 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. Based on information obtained during such visits and observations, ENGINEER will endeavor for the benefit of OWNER to determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and on-site observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work. ENGINEER's visits and on-site observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.13, and particularly, but without limitation, during or as a result of ENGINEER's on-site visits or observations of CONTRACTOR's Work ENGINEER will 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 furnishing or performance of the Work.

Project Representative:

9.3. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more continuous observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.13 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other person will be as provided in the Supplementary Conditions.

Clarifications and Interpretations:

9.4. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER or CONTRACTOR believes that a written clarification or interpretation justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree to the amount or extent thereof, if any, OWNER or CONTRACTOR may make a written claim therefore as provided in Article 11 or Article 12.

Authorized Variations in Work:

9.5. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR who shall perform the Work involved promptly. If OWNER or CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree as to the amount or extent thereof, OWNER or CONTRACTOR may make a written claim therefore as provided in Article 11 or 12.

Rejecting Defective Work:

9.6. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be *defective*, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

9.7. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraphs 6.24 through 6.28 inclusive.

9.8. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

9.9. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

Determinations for Unit Price:

9.10. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding upon OWNER and CONTRACTOR, unless, within ten days after the date of any such decision, either OWNER or CONTRACTOR delivers to the other and to ENGINEER written notice of intention to appeal from ENGINEER's decision and: (i) an appeal from ENGINEER's decision is taken within the time limits and in accordance with the procedures set forth in Exhibit GC-A, "Dispute Resolution Agreement," entered into between OWNER and CONTRACTOR pursuant to Article 16, or (ii) if no such Dispute Resolution Agreement has been entered into, a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to ENGINEER's decision, unless otherwise agreed in writing by OWNER and CONTRACTOR. Such appeal will not be subject to the procedures of paragraph 9.11.

Decisions on Disputes:

9.11. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating 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 and Claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph. Written notice of each such claim, dispute or other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty days) after the start of the occurrence or event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty days after the start of such occurrence or event unless ENGINEER allows an additional period of time for the submission of additional or more accurate data in support of such claim, dispute or other matter. The opposing party shall submit any response to ENGINEER and the claimant within thirty days after receipt of the claimant's last submittal (unless ENGINEER allows additional time). ENGINEER will render a formal decision in writing within thirty days after receipt of the opposing party's submittal, if any, in accordance with this paragraph. ENGINEER's written decision on such claim, dispute or other matter will be final and binding upon OWNER and CONTRACTOR unless: (i) an appeal from ENGINEER's decision is taken within the time limits and in accordance with the procedures set forth in EXHIBIT GC-A, "Dispute Resolution Agreement," entered into between OWNER and CONTRACTOR pursuant to Article 16, or (ii) if no such Dispute Resolution Agreement has been entered into, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within thirty days after the date of such decision and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to such claim, dispute or other matter in accordance with applicable Laws and Regulations within sixty days of the date of such decision, unless otherwise agreed in writing by OWNER and CONTRACTOR.

9.12. When functioning as interpreter and judge under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to paragraphs 9.10 or

9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will 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 or Regulations in respect of any such claim, dispute or other matter pursuant to Article 16.

9.13. Limitations on ENGINEER's Authority and Responsibilities:

9.13.1. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise or performance of any authority or responsibility by ENGINEER shall create, impose or give rise to any duty owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them.

9.13.2. ENGINEER will 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 furnishing or performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

9.13.3. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9.13.4. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests and approvals and Other documentation required to be delivered by paragraph 14.12 will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests and approvals that the results certified indicate compliance with, the Contract Documents.

9.13.5. The limitations upon authority and responsibility set forth in this paragraph 9.13 shall also apply to ENGINEER's Consultants, Resident Project Representative and assistants.

ARTICLE 10--CHANGES IN THE WORK

10.1. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work. Such additions, deletions or revisions will be authorized by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

10.2. If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an adjustment in the Contract Price or an adjustment of the Contract Times that should be allowed as a result of a Work

Change Directive, a claim may be made therefore as provided in Article 11 or Article 12.

10.3. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.5 and 3.6 except in the case of any emergency as provided in paragraph 6.23 or in the case of uncovering Work as provided in paragraph 13.9.

10.4. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

10.4.1. changes in the Work which are (i) ordered by OWNER pursuant to paragraph 10.1, (ii) required because of acceptance of *defective* Work under paragraph 13.13 or correcting *defective* Work under paragraph 13.14, or (iii) agreed to by the parties;

10.4.2. changes in the Contract Price or Contract Times which are agreed to by the parties; and

10.4.3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11;

provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.29.

10.5. 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 Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11--CHANGE OF CONTRACT PRICE

11.1. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at CONTRACTOR's expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an adjustment in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the start of the occurrence or event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after the start of such occurrence or event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the adjustment claimed covers all known amounts to which the claimant is entitled as a result of said occurrence or event. All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise

agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

11.3. The value of any Work covered by a Change Order or of any claim for an adjustment in the Contract Price will be determined as follows:

11.3.1. 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 paragraphs 11.9.1 through 11.9.3, inclusive);

11.3.2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2);

11.3.3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 11.3.2, on the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 11.6).

Cost of the Work:

11.4. 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. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amount no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen and other personnel employed full-time 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 after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

11.4.2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for Work performed or furnished by Subcontractors. If required by OWNER, CONTRACTOR shall

obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids, if any, will be accepted. 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 paragraphs 11.4, 11.5, 11.6 and 11.7. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4. 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.

11.4.5. Supplemental costs including the following:

11.4.5.1. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof--all 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.

11.4.5.4. Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

11.4.5.5. 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.

11.4.5.6. 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 and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER in accordance with paragraph 5.9), provided they 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. If, however, any such loss or damage requires reconstruction and CONTRACTOR is

placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7. The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9. Cost of premiums for additional Bonds and insurance required because of changes in the Work.

11.5. The term Cost of the Work shall not include any of the following:

11.5.1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership 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 a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.4.1. or specifically covered by paragraph 11.4.4--all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

11.5.2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

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

11.5.4. Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.4.5.9 above).

11.5.5. 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.

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

11.6. The CONTRACTOR's fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1. a mutually acceptable fixed fee

11.7. Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4 and 11.5, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

Cash Allowance:

11.8. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be furnished and performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

11.8.1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2. CONTRACTOR's cost for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances and no demand for additional payment on account of any of the foregoing will be valid.

Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.9. Unit Price Work:

11.9.1. 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 established unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. 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 will be made by ENGINEER in accordance with paragraph 9.10.

11.9.2. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

11.9.3. OWNER or CONTRACTOR may make a claim for an adjustment in the Contract Price in accordance with Article 11 if:

11.9.3.1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

11.9.3.2. there is no corresponding adjustment with respect to any other item of Work; and

11.9.3.3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12--CHANGE OF CONTRACT TIMES

12.1. The Contract Times (or Milestones) may only be changed by a Change Order or a Written Amendment. Any claim for an adjustment of the Contract Times (or Milestones) shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Times (or Milestones) shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Times (or Milestones) will be valid if not submitted in accordance with the requirements of this paragraph 12.1.

12.2. All time limits stated in the Contract Documents are of the essence of the Agreement.

12.3. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a claim is made therefore as provided in paragraph 12.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions or acts of God. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.4. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall OWNER be liable to CONTRACTOR, any Subcontractor, any Supplier, 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 (i) delays caused by or within the control of CONTRACTOR, or (ii) delays beyond the control of both parties including but not limited to fires, floods,

epidemics, abnormal weather conditions, acts of God or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

ARTICLE 13--TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1. *Notice of Defects:* Prompt notice of all defective Work of which OWNER or ENGINEER have actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories and governmental agencies with jurisdiction interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

Tests and Inspections:

13.3. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

13.4. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

13.4.1. for inspections, tests or approvals covered by paragraph 13.5 below;

13.4.2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.9 below shall be paid as provided in said paragraph 13.9; and

13.4.3. as otherwise specifically provided in the Contract Documents.

13.5. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection, or approval. CONTRACTOR shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work.

13.6. If any Work (or the work of others) that is to be inspected, tested or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

13.7. Uncovering Work as provided in paragraph 13.6 shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

Uncovering Work:

13.8. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

13.9. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is *defective*, CONTRACTOR shall pay all claims, costs, losses and damages caused by, arising out of or resulting from such uncovering, exposure, observation, 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 shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefore as provided in Article 11. If, however, such Work is not found to be *defective*, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefore as provided in Articles 11 and 12.

OWNER May Stop the Work:

13.10. If the Work is *defective*, 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 has been eliminated; 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 surety or other party.

Correction or Removal of Defective Work:

13.11. If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all *defective* Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with Work that is not *defective*. CONTRACTOR shall pay all claims, costs, losses and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.12. Correction Period:

13.12.1. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be *defective*, CONTRACTOR shall promptly, without cost to

OWNER and in accordance with OWNER's written instructions: (i) correct such *defective* Work, or, if it has been rejected by OWNER, remove it from the site and replace it with Work that is not *defective*, and (ii) satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If 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, OWNER may have the *defective* Work corrected or the rejected Work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

13.12.2. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

13.12.3. Where *defective* Work (and damage to other Work resulting therefrom) has been corrected, removed or replaced under this paragraph 13.12, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

Acceptance of Defective Work:

13.13. If, instead of requiring correction or removal and replacement of *defective* Work OWNER (and, prior to ENGINEER's recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all claims, costs, losses and damages attributable to OWNER's evaluation of and determination to accept such *defective* Work (such costs to be approved by ENGINEER as to reasonableness). If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefore as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct *defective* Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11, 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 days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. In connection with such corrective and remedial action, 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, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors and ENGINEER and ENGINEER's Consultants access to the site to enable OWNER to

exercise the rights and remedies under this paragraph. All claims, costs, losses and damages incurred or sustained by OWNER in exercising such rights and remedies will be charged against CONTRACTOR and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefore as provided in Article 11. Such claims, costs, losses and damages will 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. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies hereunder.

ARTICLE 14--PAYMENTS TO CONTRACTOR AND COMPLETION

Schedule of Values:

14.1. The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

Application for Progress Payment

14.2. At least twenty days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER's interest therein, all of which will be satisfactory to OWNER. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

CONTRACTOR's Warranty of Title:

14.3. 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.

Review of Applications for Progress Payment:

14.5. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

14.5.1. the Work has progressed to the point indicated.

14.5.2. 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 Substantial 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 paragraph 9.10, and to any other qualifications stated in the recommendation), and

14.5.3. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or (ii) that 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.

14.6. ENGINEER's recommendation of any payment, including final payment, shall not mean that ENGINEER is 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 furnishing or performance of Work, or for any failure of CONTRACTOR to perform or furnish Work in accordance with the Contract Documents.

14.7. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.5. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

14.7.1. the Work is *defective*, or completed Work has been damaged requiring correction or replacement,

14.7.2. the Contract Price has been reduced by Written Amendment or Change Order,

14.7.3. OWNER has been required to correct *defective* Work or complete Work in accordance with paragraph 13.14, or

14.7.4. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.4 inclusive.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

14.7.5. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work,

14.7.6. 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.

14.7.7. there are other items entitling OWNER to a set-off against the amount recommended, or

14.7.8. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.7.1. through 14.7.3 or paragraphs 15.2.1 through 15.2.4 inclusive;

but OWNER must have CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

Substantial Completion:

14.8. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within fourteen days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefore. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said fourteen days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER

and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

14.9. OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

14.10. Use by OWNER at OWNER's option of any substantially completed part of the Work which: (i) has specifically been identified in the Contract Documents, or (ii) OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.10.1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraphs 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.10.2. No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of paragraph 5.15 in respect of property insurance.

Final Inspection:

14.11. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or *defective*. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

Final Application for Payment:

14.12. After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance required by paragraph 5.4, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.4.13, (ii) consent of the surety, if any, to final payment, and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu of such releases or waivers of Liens and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and (ii) all payrolls, material and equipment bills and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

Final Payment and Acceptance:

14.13. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.15. Otherwise, ENGINEER will return the Application 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.

14.14. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

Waiver of Claims:

14.15. The making and acceptance of final payment will constitute:

14.15.1. a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to

paragraph 14.11, 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; and

14.15.2. a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 15--SUSPENSION OF WORK AND TERMINATION

OWNER May Suspend Work:

15.1. At any time and without cause, OWNER may suspend the Work, or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes an approved claim therefore as provided in Articles 11 and 12.

OWNER May Terminate:

15.2. Upon the occurrence of any one or more of the following events:

15.2.1. if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.9 as adjusted from time to time pursuant to paragraph 6.6);

15.2.2. if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

15.2.3. if CONTRACTOR disregards the authority of ENGINEER; or

15.2.4. if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety, if any,) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), 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 as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses and damages sustained by OWNER arising out of or resulting from completing the Work such excess will be paid to CONTRACTOR. If such claims, costs, losses and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses and damages incurred by

OWNER will be reviewed by ENGINEER as to their reasonableness and when so approved by ENGINEER incorporated in a Change Order, provided that when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, 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 monies due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4. Upon seven day's written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items);

15.4.1. for completed and acceptable 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;

15.4.2. 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;

15.4.3. for all claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and others; and

15.4.4. for reasonable expenses directly attributable to termination.

CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

CONTRACTOR May Stop Work or Terminate:

15.5. If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application of Payment within thirty days after it is submitted or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and ENGINEER, and provided OWNER and ENGINEER do not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.4. In lieu of terminating the Agreement and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within thirty days after it is submitted, or OWNER has failed for thirty days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may upon seven day's written notice to OWNER and ENGINEER stop the Work until payment of all such amount due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.5 are not intended to preclude CONTRACTOR from making claim under Articles 11 and 12 for an increase in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping Work as permitted by this paragraph.

ARTICLE 16--DISPUTE RESOLUTION

If and to the extent that OWNER and CONTRACTOR have agreed on the method and procedure for resolving disputes between them that may arise under this Agreement, such dispute resolution method and procedure, if any, shall be as set forth in Exhibit GC-A, "Dispute Resolution Agreement," to be attached hereto and made a part hereof. If no such agreement on the method and procedure for resolving such disputes has been reached, and subject to the provisions of paragraphs 9.10, 9.11, and 9.12, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17--MISCELLANEOUS

Giving Notice:

17.1. 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.

Computation of Times:

17.2.1. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.2.2. A calendar day of twenty-four hours measured from midnight to the next midnight will constitute a day.

Notice of Claim:

17.3. Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

Cumulative Remedies:

17.4. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.12, 6.16, 6.30, 6.31, 6.32, 13.1, 13.12, 13.14, 14.3 and 15.2 and all of the rights and remedies available to OWNER and ENGINEER thereunder, 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.

Professional Fees and Court Costs Included:

17.5. Whenever reference is made to "claims, costs, losses and damages," it shall include in each case, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

[The remainder of this page was left blank intentionally.]

INDEX TO SUPPLEMENTAL GENERAL CONDITIONS

1. ENUMERATION OF PLANS, SPECIFICATIONS AND ADDENDA	38
2. STATED ALLOWANCES	38
3. PAYMENTS TO CONTRACTOR	39
4. FEDERAL LABOR STANDARDS PROVISIONS	42
5. SPECIAL HAZARDS	53
6. CONTRACTOR’S LIABILITY AND SUBCONTRACTORS LIABILITY	53
7. PHOTOGRAPHS OF PROJECT	53
8. SCHEDULE OF OCCUPATIONAL CLASSIFICATIONS AND MINIMUM WAGE RATES	53
9. BUILDER’S RISK INSURANCE	54
10. SPECIAL EQUAL OPPORTUNITY PROVISIONS	54
11. CERTIFICATION OF COMPLIANCE WITH AIR AND WATER ACTS	66
12. SPECIAL CONDITIONS PERTAINING TO HAZARDS, SAFETY AND ACCIDENT PREVENTION	67
13. FLOOD DISASTER PROTECTION	68
14. ACCESS TO RECORDS/MAINTENANCE OF RECORDS	68
15. CONFLICTS OF INTEREST	68
16. DRUG-FREE WORKPLACE	69
17. PROJECT SIGN	69

1. ENUMERATION OF PLANS, SPECIFICATIONS AND ADDENDA

Following are the Plans, Specifications and Addenda which form a part of this contract, as set forth in Paragraph 1 of the General Conditions, "Contract and Contract Documents":

DRAWINGS

General Construction:	Nos.	<u>1 - 11</u>	_____
Heating and Ventilating:	"	_____	_____
Plumbing:	"	_____	_____
Electrical:	"	_____	_____
_____	"	_____	_____
_____	"	_____	_____

SPECIFICATIONS:

General Construction	Page	<u>DS 1-1</u>	to	<u>DS 6-7,</u>	incl.
	Page	_____	to	_____,	incl.
Heating and Ventilating:	Page	_____	to	_____,	incl.
Plumbing:	Page	_____	to	_____,	incl.
Electrical:	Page	_____	to	_____,	incl.
_____	Page	_____	to	_____,	incl.
_____	Page	_____	to	_____,	incl.

ADDENDA:

No.	_____	Date	_____	No.	_____	Date	_____
No.	_____	Date	_____	No.	_____	Date	_____

2. STATED ALLOWANCES

Pursuant to Article 11.8 of the General Conditions, the Contractor shall include the following cash allowances in his proposal:

- (a) For _____ (Page _____ of Specifications) \$ _____
- (b) For _____ (Page _____ of Specifications) \$ _____
- (c) For _____ (Page _____ of Specifications) \$ _____
- (d) For _____ (Page _____ of Specifications) \$ _____
- (e) For _____ (Page _____ of Specifications) \$ _____
- (f) For _____ (Page _____ of Specifications) \$ _____

3. A. Payments to Contractor

1. To insure the proper performance of this contract, the Owner shall retain five percent (5%) of the amount of each estimate until final completion and acceptance of all work covered by this contract: Provided that the Contractor shall submit his estimate not later than the first day of the month: Provided further that on completion and acceptance of each separate building, public work, or other division of the contract, on which the price is stated separately in the contract, payment may be made in full, including retained percentages thereon, less authorized deductions.
2. In preparing estimates the material delivered on the site and preparatory work done may be taken into consideration.
3. All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the contract.
4. Owner's Right to Withhold Certain Amounts and Make Application Thereof:
The Contractor agrees that he will indemnify and save the Owner harmless from all claims growing out of the lawful demands of subcontractors, laborers, workers, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If the Contractor fails so to do, then the Owner may, after having served written notice on the said Contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor or his Surety. In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the Contractor, and any payment so made by the Owner shall be considered as a payment made under the contract by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

B. Payments by Contractor

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

C. Time for Completion and Liquidated Damages

It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the contract of the work to be done hereunder are ESSENTIAL CONDITIONS of this contract; and it is further mutually understood and agreed that the work embraced in this contract shall be commenced on a date to be specified in the "Notice to Proceed".

The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this contract, to pay to the Owner the amount specified in the contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.

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

It is further agreed that time is of the essence of each and every portion of this contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this contract. Provided that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; Provided further that the Contractor shall not to be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

- (a) To any preference, priority or allocation order duly issued by the Government.
- (b) To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and
- (c) To any delays of Subcontractors or suppliers occasioned by any of the causes specified in subsections (a) and (b) of this article:

Provided further that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the contract, notify the Owner, in writing, of the delay and notify the Contractor within a reasonable time of its decision in the matter.

D. Protection of Lives and Health

"The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work. The safety provisions of applicable laws and building and construction codes, in addition to specific safety and health regulations described by Chapter XIII, Bureau of Labor Standards, Department of Labor, Part 1518, Safety and Health Regulations for Construction, as outlined in the Federal Register, Volume 36, No. 75, Saturday, April 17, 1971. Title 29 - LABOR, shall be observed and the Contractor shall take or cause to be taken, such additional safety and health measures as the Contracting Authority may determine to be reasonably necessary."

E. Subcontracts

The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5 (a)(1) through (10) and such other clauses as the (Department of Housing and Urban Development) may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

F. Interest of Member of or Delegate to Congress

No member of or Delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this contract or to any benefit that may arise there from, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

G. Other Prohibited Interests

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

H. Use and Occupancy Prior to Acceptance by Owner

The Contractor agrees to the use and occupancy of a portion or unit of the project before formal acceptance by the Owner, provided the Owner:

- (a) Secures written consent of the Contractor except in the event, in the opinion of the Architect/Engineer, the Contractor is chargeable with unwarranted delay in final clean-up of punch list items or other contract requirements.
- (b) Secures endorsement from the insurance carrier and consent of the surety permitting occupancy of the building or use of the project during the remaining period of construction, or,
- (c) When the project consists of more than one building, and one of the buildings is occupied, secures permanent fire and extended coverage insurance, including a permit to complete construction. Consent of the surety must also be obtained.

I. Photographs of the Project

If required by the Owner, the Contractor shall furnish photographs of the project, in the quantities and as described in the Supplemental General Conditions.

J. Suspension of Work

Should the Owner be prevented or enjoined from proceeding with work either before or after the start of construction by reason of any litigation or other reason beyond the control of the Owner, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay; but time for completion of the work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay with such determination to be set forth in writing.

4. FEDERAL LABOR STANDARDS PROVISIONS

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages

All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less than often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(iv). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 FR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- (ii)(a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - (2) The classification is utilized in the area by the construction industry; and
 - (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)
- (c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representative, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)
- (d) The wage rate (including the fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

- (iv) If the contractor does not make payments to a trustee or other third persons, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding

HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices and trainees, employed by the contractor or any subcontractor the full amount of wages required by the contract.

In the event of failure to pay any laborer or mechanic, including any apprentice or trainee, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make sure disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records.

Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1 (b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

- (ii)(a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149).
- (b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5(a)(3)(i) and that such information is correct and complete;

- (2) That each laborer or mechanic (including each apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;
 - (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph A.3.(ii)(b) of this section.
 - (d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.
- (iii) The contractor or subcontractor shall make the records required under paragraph A.3.(i) of this section available for inspection, copying, or transcription by authorized representative of HUD or its designee or the Department of Labor, and shall permit such representative to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.
4. (i) Apprentices.

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe

benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees.

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity.

The utilization of apprentices, trainees and journeyman under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements.

The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

6. Subcontracts.

The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5

7. Contract termination; debarment.

A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards.

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of Eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part "Whoever, for the purpose of ...influencing in any way the action of such Administration ...makes, utters or publishes any statement, knowing the same to be false ...shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees.

No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act

As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

1. Overtime requirements.

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages, liquidated damages.

In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

3. Withholding for unpaid wages and liquidated damages.

HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

4. Subcontracts.

The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety

1. No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.
2. The contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).
3. The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

5. SPECIAL HAZARDS

The Contractor's and his Subcontractor's Public Liability and Property Damage Insurance shall provide adequate protection against the following special hazards:

6. CONTRACTOR'S AND SUBCONTRACTOR'S PUBLIC LIABILITY, VEHICLE LIABILITY, AND PROPERTY DAMAGE INSURANCE

As required under Article 5 of the General Conditions, the Contractor's Public Liability Insurance and Vehicle Liability Insurance shall be in an amount not less than \$ 1,000,000 for injuries, including accidental death, to any one person, and subject to the same limit for each person, in an amount not less than \$ 1,000,000 on account of one accident, and Contractor's Property Damage Insurance in an amount not less than \$ 1,000,000.

The Contractor shall either (1) require each of his subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Public Liability and Property Damage Insurance of this type and in the same amounts as specified in the preceding paragraph, or (2) insure the activities of his subcontractors in his own policy.

7. PHOTOGRAPHS OF PROJECT

As provided in Paragraph 3.I of the Supplemental General Conditions, the Contractor will furnish photographs in the number, type, and stage as enumerated below:

8. SCHEDULE OF OCCUPATIONAL CLASSIFICATIONS AND MINIMUM HOURLY WAGE RATES AS REQUIRED UNDER PARAGRAPH 4.B OF THE SUPPLEMENTAL GENERAL CONDITIONS

Given on Pages 1 - 5, _____ and _____.

9. BUILDER'S RISK INSURANCE

As provided in the General Conditions, Article 5.6, the Contractor will/will not** maintain Builder's Risk Insurance (fire and extended coverage) on a 100 percent completed value basis on the insurable portions of the project for the benefit of the Owner, the Contractor, and all Subcontractors, as their interests may appear.

** Strike out one.

10. SPECIAL EQUAL OPPORTUNITY PROVISIONS

A. Activities and Contracts Not Subject to Executive Order 11246, as Amended

(Applicable to Federally assisted construction contracts and related subcontracts \$10,000 and under.)

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
2. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by Contracting Officer setting forth the provisions of this nondiscrimination clause. The Contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
3. Contractors shall incorporate foregoing requirements in all subcontracts.

B. Executive Order 11246 (contracts/subcontracts above \$10,000)

1. Section 202 Equal Opportunity Clause

During the performance of this contract, the Contractor agrees as follows:

- a. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment, or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- b. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration without regard to race, color, religion, sex, or national origin.
- c. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided by the Contract Compliance Officer advising the said labor union or workers' representatives of the Contractor's commitment under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- e. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Department of the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and others.
- f. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

g. The Contractor will include the provisions of the sentence immediately preceding paragraph a. and the provisions of paragraphs a. through g. in every subcontract or purchase order unless exempted by rules, regulations, orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Department may direct as a means of enforcing such provisions, including sanctions for non-compliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Department, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

2. Notice of Requirement for Affirmative Action to ensure Equal Employment Opportunity (Executive Order 11246).
(Applicable to contracts/subcontracts exceeding \$10,000.)

- a. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
- b. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation	Goals for female participation
Insert Goals	Insert Goals
12.0%	6.9%

NOTE: THESE GOALS MUST BE PROVIDED. Also, list State Geographic Area to be covered on following page.

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area. If the Contractor performs construction work in a geographic area located outside of the covered area, it shall apply the goals established for such geographic area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its Federally involved and non-Federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

- c. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
- d. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is DeKalb County.

3. Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

- a. As used in these specifications:
 - (1) "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - (2) "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - (3) "Employer identification number" means the federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
 - (4) "Minority" includes:
 - (a) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

- (b) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South America or other Spanish Culture or origin, regardless of race);
 - (c) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);
 - (d) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
- b. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
- c. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

- d. The Contractor shall implement the specific affirmative action standards provided in paragraphs g.(1) through (16) of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing contracts in geographical areas where they do not have a Federal or Federally-assisted construction contract shall apply the minority and female goals established for the geographic area where the contract is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
- e. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
- f. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
- g. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

- (1) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
- (2) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and maintain a record of the organization's responses.
- (3) Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
- (4) Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- (5) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under g.(2) above.

- (6) Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company's EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- (7) Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- (8) Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- (9) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date of the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- (10) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

- (11) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60-3.
 - (12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - (13) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - (14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - (15) Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - (16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
- h. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations g.(1) through (16). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under g.(1) through (16) of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation shall not be a defense for the Contractor's non-compliance.

- i. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
- j. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
- k. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
- l. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
- m. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph g. of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

- n. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company's EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee, the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number where assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and location at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractor shall not be required to maintain separate records.
- o. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

C. Certification of Nonsegregated Facilities (Over \$10,000)

By the submission of this bid, the bidder, offeror, applicant or subcontractor certifies that he/she does not maintain or provide for his/her employees any segregated facility at any of his/her establishments, and that he/she does not permit employees to perform their services at any location, under his/her control, where segregated facilities are maintained. He/She certifies further that he/she will not maintain or provide for employees any segregated facilities at any of his/her establishments, and he/she will not permit employees to perform their services at any location under his/her control where segregated facilities are maintained. The bidder, offeror, applicant or subcontractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause of this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms, and other storage or dressing areas, ***transportation and housing facilities provided for employees which are segregated on the basis of race, color, religion, or are in fact segregated on the basis of race, color, religion, or otherwise. He/She further agrees that (except where he/she has obtained identical certifications from proposed subcontractors for specific time periods) he/she will obtain identical certification from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause; that he/she will retain such certifications in his/her files; and that he/she will forward the following notice to such proposed subcontractors (except where proposed subcontractors have submitted identical certifications for specific time periods).

D. Civil Rights Act of 1964

Under Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

E. Section 109 of the Housing and Community Development Act of 1974

No person in the United States shall on the grounds of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

F. "The Section 3 Clause"

1. The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of section 3 of the Housing Urban Development Act of 1968, as amended, 12 U.S.C. 1701u. Section 3 requires that to the greatest extent feasible, opportunities for training and employment be given to lower income residents of the area of the Section 3 covered project, and contracts for work in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the area of the Section 3 covered project.
2. The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 Part CFR 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this contract. The parties to this contract certify and agree that they are under no contractual or other disability which would prevent them from complying with these requirements.
3. The contractor will send to each labor organization or representative of workers with which he has a collective bargaining agreement or other contract or understanding, if any, a notice advising the said labor organization or workers' representative of his commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.
4. The contractor will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of Federal Financial assistance, take appropriate action pursuant to the subcontract upon a finding that the subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR Part 135. The contractor will not subcontract with any subcontractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR part 135 and will not let any subcontract unless the subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

5. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of the contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient, its contractors and subcontractors, its successors, and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided, and to such sanctions as are specified by 24 CFR Part 135.

G. Age Discrimination Act of 1975

No person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under, any program or activity receiving Federal financial assistance.

H. Section 504 Handicapped

Non-Discrimination for Handicapped Workers

No otherwise qualified handicapped individual in the U.S., as defined in Section 7, Paragraph 6 of the Rehabilitation Act of 1973 shall, solely by reason of this handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

11. CERTIFICATION OF COMPLIANCE WITH AIR AND WATER ACTS

(Applicable to Federally assisted construction contracts and related subcontracts exceeding \$100,000)

Compliance with Air and Water Acts

During the performance of this contract the contractor and all subcontractors shall comply with the requirements of the Clean Air Act, as amended, 42 USC 1857 et seq., the Federal Water Pollution Control Act, as amended, 33 USC 1251 et seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended.

In addition to the foregoing requirements, all nonexempt contractors and subcontractors shall furnish to the Owner, the following:

1. A stipulation by the Contractor or subcontractors, that any facility to be utilized in the performance of any nonexempt contract or subcontract, is not listed on the List of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR 15.20.

2. Agreement by the Contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 USC 1857c-8) and Section 308 of the Federal Water Pollution Control Act, as amended, (33 USC 1318) relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
3. A stipulation that as a condition for the award of the contract, prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized, or to be utilized for the contract, is under consideration to be listed on the EPA List of Violating Facilities.
4. Agreement by the Contractor that he will include, or cause to be included, the criteria and requirements in paragraph (1) through (4) of this section in every nonexempt subcontract and requiring that the Contractor will take such action as the Government may direct as a means of enforcing such provisions.

12. SPECIAL CONDITIONS PERTAINING TO HAZARDS, SAFETY STANDARDS AND ACCIDENT PREVENTION

A. Lead-Based Paint Hazards

(Applicable to contracts for construction or rehabilitation of residential structures.)
The construction or rehabilitation of residential structures is subject to the HUD Lead-Based Paint regulations, 24 CFR Part 35. The Contractor and Subcontractors shall comply with the provisions for the elimination of lead-base paint hazards under sub-part B of said regulations. The Owner will be responsible for the inspections and certifications required under Section 35.14(f) thereof.

B. Use of Explosives (Modify as Required)

When the use of explosives is necessary for the prosecution of the work, the Contractor shall observe all local, state and Federal laws in purchasing and handling explosives. The Contractor shall take all necessary precaution to protect completed work, neighboring property, water lines, or other underground structures. Where there is danger to structures or property from blasting, the charges shall be reduced and the material shall be covered with suitable timber, steel or rope mats.

The Contractor shall notify all owners of public utility property of intention to use explosives at least eight hours before blasting is done, close to such property. Any supervision or direction of use of explosives by the engineer, does not in any way reduce the responsibility of the Contractor or his Surety for damages that may be caused by such use.

C. Danger Signals and Safety Devices (Modify as Required)

The Contractor shall make all necessary precautions to guard against damages to property and injury to persons. He shall put up and maintain in good condition, sufficient red or warning lights at night, suitable barricades and other devices necessary to protect the public. In case the Contractor fails or neglects to take such precautions, the Owner may have such lights and barricades installed and charge the cost of this work to the Contractor. Such action by the Owner does not relieve the Contractor of any liability incurred under these specifications or contract.

13. FLOOD DISASTER PROTECTION

This Contract is subject to the requirements of the Flood Disaster Protection Act of 1973 (P.L. 93-234). Nothing included as a part of this Contract is approved for acquisition or construction purposes as defined under Section 3(a) of said Act, for use in an area identified by the Secretary of HUD as having special flood hazards which is located in a community not then in compliance with the requirements for participation in the national flood insurance program pursuant to Section 201(d) of said Act; and the use of any assistance provided under this Contract for such acquisition or construction in such identified areas in communities then participating in the national flood insurance program shall be subject to the mandatory purchase of flood insurance requirements of Section 102(a) of said Act.

Any contract or agreement for the sale, lease, or other transfer of land acquired, cleared or improved with assistance provided under the Contract shall contain, if such land is located in an area identified by the Secretary as having special flood hazards and in which the sale of flood insurance has been made available under the National Flood Insurance Act of 1968, as amended, 42 U.S.C. 4001 et seq., provisions obligating the transferee and its successors or assigns to obtain and maintain, during the ownership of such land, such flood insurance as required with respect to financial assistance for acquisition or construction purposes under Section 102(a) of the Flood Disaster Protection Act of 1973.

14. ACCESS TO RECORDS/MAINTENANCE OF RECORDS

The Contractor shall maintain accounts and records, including personnel, property, and financial records, adequate to identify and account for all costs pertaining to the contract and such other records as may be deemed necessary by the locality to assure proper accounting for all funds. These records will be available for audit purposes to the locality or the State or any other authorized representative, and will be retained for three years after contract completion unless permission to destroy them is granted by the locality. Moreover, the locality, State, or any authorized representative shall have access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

15. CONFLICT OF INTEREST OF OFFICERS OR EMPLOYEES OF THE LOCAL JURISDICTION, MEMBERS OF THE LOCAL GOVERNING BODY, OR OTHER PUBLIC OFFICIALS

No officer or employee of the local jurisdiction or its designees or agents, no member of the governing body, and no other public official of the locality who exercises any function or responsibility with respect to this contract, during his/her tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for work to be performed. Further, the contractor shall cause to be incorporated in all subcontracts the language set forth in this paragraph prohibiting conflict of interest.

16. DRUG-FREE WORKPLACE

Under the provisions of Tennessee Code Annotate § 50-9-113 enacted by the General Assembly effective 2001, a) employers with five (5) or more employees who contract with either the state or a local government to provide construction services are required to submit an affidavit stating that they have a drug free workplace program that complies with Title 50, Chapter 9, in effect at the time of submission of a bid at least to the extent required of governmental entities. The statute, imposes other requirements on the contractor, but the grantee's responsibility is specifically limited in section (b) of the state as follows:

(b) A written affidavit by the principal officer of a covered employer provided to a local government at the time such bid or contract is submitted stating that the employer is in compliance with this section shall absolve the local government of all further responsibility under this section and any liability arising from the employer's compliance or failure of compliance with the provisions of this section.

17. PROJECT SIGN

If a project sign is erected, it must include the following:

Governor *(Name)*
 Department of Economic and Community Development
 Commissioner *(Name)*
 CDBG Grant *(Amount)*



State and Local Fiscal Recovery Funds (SLRF) Supplemental Conditions for Contracts

Equal Employment Opportunity

Any contract that uses federal funds to pay for construction work is a “federally assisted construction contract” and must include the equal opportunity clause found in 2 C.F.R. Part 200, unless otherwise stated in 41 C.F.R. Part 60. This contract provision is required for all procurements that meet the definition of a “federally assisted construction contract.”

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

applicants for employment.

- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law. (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through
- (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Davis-Bacon Act

U.S. Treasury exercised its federal authority outlining the requirements for water infrastructure projects executed using ARP funds. Therefore, the requirements for prevailing wages and rates slightly differs from the standards of Davis-Bacon. Individual projects less than \$10 million dollars are not required to provide certification that prevailing wages and rates were followed. Individual projects of \$10 million dollars or more require certification like Davis-Bacon and are outlined below. Please note that any project using other funding sources, like Community Development Block Grants or SRF loans, are subject to requirements for those programs. When combining funding sources on a single and complete project or phase, other funding program requirements may trump the requirements for the use of ARP funds. We recommend Grantees and Project Owners discuss project requirements with TDEC when leveraging ARP funds with other funding programs to ensure all applicable rules and regulations are followed.

Individual Water Infrastructure Projects of \$10 million dollars or more

- (1) A recipient may provide a certification that, for the relevant project, all laborers and mechanics employed by contractors and subcontractors in the performance of such project are paid wages at rates not less than those prevailing, as determined by the U.S. Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly known as the “Davis-Bacon Act”), for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the civil subdivision of the State (or the District of Columbia) in which the work is to be performed, or by the appropriate State entity pursuant to a corollary State prevailing-wage-in-construction law (commonly known as “baby Davis-Bacon Acts”). If such certification is not provided, a recipient must provide a project employment and local impact report detailing:
 - a. The number of employees of contractors and sub-contractors working on the project;
 - b. The number of employees on the project hired directly and hired through a third party;
 - c. The wages and benefits of workers on the project by classification; and
 - d. Whether those wages are at rates less than those prevailing. 19 Recipients must maintain sufficient records to substantiate this information upon request.

- (2) A recipient may provide a certification that a project includes a project labor agreement, meaning a pre-hire collective bargaining agreement consistent with section 8(f) of the National Labor Relations Act (29 U.S.C. 158(f)). If the recipient does not provide such certification, the recipient must provide a project workforce continuity plan, detailing:
 - a. How the recipient will ensure the project has ready access to a sufficient supply of appropriately skilled and unskilled labor to ensure high-quality construction throughout the life of the project, including a description of any required professional certifications and/or in-house training;
 - b. How the recipient will minimize risks of labor disputes and disruptions that would jeopardize timeliness and cost-effectiveness of the project;

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

- c. How the recipient will provide a safe and healthy workplace that avoids delays and costs associated with workplace illnesses, injuries, and fatalities, including descriptions of safety training, certification, and/or licensure requirements for all relevant workers (e.g., OSHA 10, OSHA 30);
 - d. Whether workers on the project will receive wages and benefits that will secure an appropriately skilled workforce in the context of the local or regional labor market; and
 - e. Whether the project has completed a project labor agreement.
- (3) Whether the project prioritizes local hires.
- (4) Whether the project has a Community Benefit Agreement, with a description of any such agreement.
- a. All transactions regarding this contract shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable.
 - b. Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.
 - c. Additionally, contractors are required to pay wages not less than once a week.

Copeland Anti-Kickback Act

The Copeland "Anti-Kickback" Act prohibits workers on construction contracts from giving up wages that they are owed. This requirement applies to all contracts for construction or repair work above \$2,000 in situations where the Davis-Bacon Act also applies.

- a. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
- b. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- c. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12."

Contract Work Hours and Safety Standards Act

Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5. See 2 C.F.R. Part 200, Appendix II(E). Each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours.

Compliance with the Contract Work Hours and Safety Standards Act.

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

worked in excess of forty hours in such workweek.

- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the t \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

Clean Air Act and Federal Water Pollution Control Act

For contracts over \$150,000, contracts must contain a provision requiring contractors to comply with the Clean Air Act and the Federal Water Pollution Control Act. If applicable, contracts must contain a provision that requires the contractor to agree to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q.) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387).

Clean Air Act

- (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq
- (2) The contractor agrees to report each violation to the (name of subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to Treasury, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

Federal Water Pollution Control Act

- (1) The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 ets eq.
- (2) The contractor agrees to report each violation to the (name of the subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to the Treasury, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000

Debarment and Suspension

Non-federal entities, contractors and subcontractors are subject to debarment and suspension regulations. These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities. In general, an "excluded" party cannot receive a Federal grant award or a contract within the meaning of a "covered transaction," to include subawards and subcontracts. The debarment and suspension clause is required for all contracts and subcontracts for \$25,000 or more, all contracts that require the consent of an official of a federal agency, and all contracts for federally required audit services.

Suspension and Debarment

- (1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (3) This certification is a material representation of fact relied upon by (insert name of recipient/subrecipient/applicant). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (insert name of recipient/subrecipient/applicant), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

Byrd Anti-Lobbying Amendment

Contractors that apply or bid for a contract of \$100,000 or more under a federal grant must file the required certification. This is also applicable to subcontractors of more than \$100,000, must include a contract provision prohibiting the use of federal appropriated funds to influence officers or employees of the federal government. Contractors that apply or bid for a contract for more than \$100,000 must also file the required certification regarding lobbying.

Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

Procurement of Recovered Materials

A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

“In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired competitively within a timeframe providing for compliance with the contract performance schedule; meeting contract performance requirements; or at a reasonable price. Information about this requirement, along with the list of EPA-designated items, is available at [EPA’s Comprehensive Procurement Guidelines webpage](#).

The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.”

Domestic Preference for Procurement

As appropriate, and to the extent consistent with law, NFEs should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products or materials produced in the United States. This includes, but is not limited to, iron, aluminum, steel, cement, and other manufactured products.

“Domestic Preference for Procurements

As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.

For purposes of this clause:

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

Produced in the United States means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. Manufactured products mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.”

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

Access to Records

NFEs and their contractors and subcontractors must give the Department of Treasury and other authorized representatives access to records associated with their awards during the federally required record retention period and as long as the records are retained.

The following access to records requirements apply to this contract:

(1) The Contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), Treasury, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The Contractor agrees to provide the Treasury or authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

Contract Changes or Modifications

To be eligible for ARP SLFRF assistance under the non-Federal entity's Treasury grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope.

Compliance with Federal Law, Regulations and Executive Orders

The recipient and its contractors are required to comply with all Federal laws, regulations, and executive orders.

"This is an acknowledgement that Treasury ARP SLFRF financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, Treasury policies, procedures, and directives."

Program Fraud and False or Fraudulent Statements or Related Acts

Recipients must comply with the requirements of The False Claims Act (31 U.S.C. §§ 3729-3733) which prohibits the submission of false or fraudulent claims for payment to the federal government. It is that the non-Federal entity include a provision in its contract that the contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to its actions pertaining to the contract.

"The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract."

These Supplemental Conditions are recommended by the Tennessee Department of Environment and Conservation for projects funded through under the American Rescue Plan (ARP) State and Local Fiscal Recovery Fund (SLFRF). If the information is reproduced or conflicts with other sections of this Bid Manual or the Contract, the more stringent requirement applies.

A LISTING OF THE DUTIES, RESPONSIBILITIES AND
LIMITATIONS OF AUTHORITY OF THE RESIDENT PROJECT REPRESENTATIVE

ENGINEER shall furnish a Resident Project Representative (RPR) to assist ENGINEER in observing performance of the Work of the Contractor.

Through more extensive on-site observations of the Work in progress and field checks of material and equipment by the RPR and assistants, ENGINEER shall endeavor to provide further protection for OWNER against defects and deficiencies in the Work but the furnishing of such services will not make ENGINEER responsible for or give ENGINEER control over construction means, methods, techniques, sequences or procedures, or for safety precautions or programs or responsibility for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

The duties and responsibilities of the RPR are limited to those of ENGINEER in ENGINEER's agreement with the OWNER and in the construction Contract Documents, and are further limited and described as follows:

A. General

RPR is ENGINEER's agent at the site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with ENGINEER and CONTRACTOR keeping OWNER advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of CONTRACTOR. RPR shall generally communicate with OWNER with the knowledge of and under the direction of ENGINEER.

B. Duties and Responsibilities of RPR

1. Schedule: Review the progress schedule, schedule of Shop Drawings submittals and schedule of values prepared by CONTRACTOR and consult with ENGINEER concerning acceptability.
2. Conferences and Meetings: Attend meetings with CONTRACTOR, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings.
3. Liaison:
 - a. Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist in understanding the intent of the Contract Documents; and assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on-site operations.

- b. Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.
4. Shop Drawings and Samples:
- a. Record date of receipt of Shop Drawings and samples.
 - b. Advise ENGINEER and CONTRACTOR of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by ENGINEER.
5. Review of Work, Rejection of Defective Work, Visiting Inspectors and Tests:
- a. Conduct on-site observations of the Work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to ENGINEER whenever RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract documents, or has been damaged, or does not meet the requirements of any test or approval required to be made; and advise ENGINEER of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing or approval.
 - c. Verify that tests, equipment and system startups and operating and maintenance training are conducted in the presence of appropriate personnel, and that CONTRACTOR maintains adequate records thereof; and observe, record and report to ENGINEER appropriate details relative to the test procedures and startups.
 - d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to ENGINEER.
6. Interpretation of Contract Documents: Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to CONTRACTOR clarifications and interpretations as issued by ENGINEER.
7. Modifications: Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to ENGINEER. Transmit to CONTRACTOR decisions as issued by ENGINEER.

8. Records:
 - a. Maintain orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.
 - b. Keep a diary or log book, recording CONTRACTOR hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to ENGINEER.
 - c. Record names, addresses and telephone numbers of all CONTRACTORS, subcontractors and major suppliers of materials and equipment.
9. Reports:
 - a. Furnish ENGINEER periodic reports as required of progress of the Work and of CONTRACTOR's compliance with the progress schedule and schedule of Shop Drawing and sample submittals.
 - b. Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of Work.
 - c. Report immediately to ENGINEER and OWNER upon the occurrence of any accident.
10. Payment Requests: Review applications for payment with CONTRACTOR for compliance with the established procedure for their submission and forward with recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the Work.
11. Certificates, Maintenance and Operation Materials: During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to ENGINEER for review and forwarding to OWNER prior to final payment for the work.

12. Completion:

- a. Before ENGINEER issues a Notice of Substantial Completion, submit to CONTRACTOR a list of observed items requiring completion or correction.
- b. Conduct final observation in the company of ENGINEER, OWNER and CONTRACTOR and prepare a final list of items to be completed or corrected.
- c. Observe that all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

C. Limitations of Authority

Resident Project Representative:

1. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by ENGINEER.
2. Shall not exceed limitations of ENGINEER's authority as set forth in the Contract Documents.
3. Shall not undertake any of the responsibilities of CONTRACTOR, subcontractors or CONTRACTOR's superintendent.
4. Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.
5. Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.
6. Shall not accept Shop Drawing or sample submittals from anyone other than CONTRACTOR.
7. Shall not authorize OWNER to occupy the Project in whole or in part.
8. Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by ENGINEER.

BID FORM

- An Individual
- A Partnership
- A Corporation
- A Limited Liability Company

Date _____

1. BID for the construction of Contract 23-01 – Sewer System Rehabilitation for the City of Smithville, Tennessee.

TO THE CITY OF SMITHVILLE, TENNESSEE:

I / WE

Name of Bidder

Address of Bidder

The undersigned, as Bidder, proposes to furnish all necessary labor, machinery, tools, apparatus, materials, equipment, service and other necessary supplies, in strict accordance with the terms and conditions of the Detailed Specifications and Contract Documents bound into the PROJECT MANUAL hereto attached and the Plans referred to herein for the construction of Contract 23-01 – Sewer System Rehabilitation and to do such other work incidental thereto as may be ordered by the Engineer, at the lump sum or unit prices listed herein.

2. The Bidder declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the places where the work is to be done; that he has examined the Plans, Detailed Specifications and Contract Documents for the work and has read all addenda furnished prior to the opening of bids; and that he has satisfied himself relative to the work to be performed.
3. The Bidder is required to fill in all blank spaces in the BID FORM for all Schedules. Failure to fill in all blank spaces for lump sum or unit prices in both words and figures may be grounds for declaring a bid irregular.
4. The Bidder agrees that his Bid shall not be withdrawn for a period of 90 calendar days after the scheduled closing time for receiving bids.

BID FORM
2090 – December 2023

5. Bids shall include sales tax and all other applicable taxes, fees or licenses.
6. The lump sum or unit prices shall include all labor, materials, shoring, overhead, profit, insurance, *etc.*, to cover the finished work of the several kinds called for.
7. The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION
BID FORM A – SEWER LINE S-1

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
1.	485 L.F.	Renovation of existing 8-inch Gravity Sewer Line with new 10-inch HDPE pipe using pipe bursting, including all television inspection, crushed stone backfill, cleaning, bypass pumping, and connections to new and existing manholes For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
2.	160 L.F.	6-inch SDR 26 PVC Pipe for Sewer Service Connections installed vertically or horizontally, complete in place, including all excavation and backfilling For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM A – SEWER LINE S-1 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
3.	8 Each	Sewer Service Connections, complete in place, including 6-inch Sewer Service Saddle, adapters if required, excavation, backfilling, 6-inch cleanout with riser and plug, inspection box, and all incidentals For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
4.	3 Each	Replacement of existing manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø standard manhole and connection of all existing lines to manholes, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM A – SEWER LINE S-1 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
5.	1 V.F.	Manhole Barrel Extensions for 4'-0" Ø standard manhole as shown on the Plans or where directed by the Engineer and as specified herein, complete in place For _____ _____ Dollars _____ Cents, per vertical foot	\$ _____	\$ _____

**BID FORM A, TOTAL AMOUNT BID,
ITEMS 1 THROUGH 5 INCLUSIVE**

\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM B – SEWER LINE S-2

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
1.	1,058 L.F.	Replacement of existing gravity sewer with 8-inch PVC sanitary gravity sewer by Open-Cut where shown on the Plans or directed by the Engineer, including sanitary sewer pipe, flexible couplings, excavation and backfill, complete in place, as specified herein For _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
2.	50 L.F.	Replacement of existing gravity sewer with 8-inch Specially Lined Class 350 R.J.D.I.P. sanitary gravity sewer by Open-Cut where shown on the Plans or directed by the Engineer, including sanitary sewer pipe, flexible couplings, excavation and backfill, complete in place, as specified herein For _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM B – SEWER LINE S-2 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
3.	40 L.F.	6-inch SDR 26 PVC Pipe for Sewer Service Connections installed vertically or horizontally, complete in place, including all excavation and backfilling For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
4.	2 Each	Sewer Service Connections, complete in place, including 6-inch Sewer Service Saddle, adapters if required, excavation, backfilling, 6-inch cleanout with riser and plug, inspection box, and all incidentals For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM B – SEWER LINE S-2 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
5.	7 Each	Replacement of existing manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø standard manhole and connection of all existing lines to manholes, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
6.	1 Each	Standard manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø standard manhole and connection of all existing lines to manholes, frame and cover, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM B – SEWER LINE S-2 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
7.	20 V.F.	Manhole Barrel Extensions for 4'-0" Ø standard manhole as shown on the Plans or where directed by the Engineer and as specified herein, complete in place For _____ _____ Dollars _____ Cents, per vertical foot	\$ _____	\$ _____
8.	1,150 L.F.	Standard temporary Silt Fence with Hay or Straw Bales, complete in place, as shown on the Plans or where directed by the Engineer For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
9.	2 Each	Impervious Check Dam installed at locations shown on the Plans or where ordered by the Engineer For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM B – SEWER LINE S-2 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
10.	50 S.Y.	Rip-Rap, hand placed where shown on the Plans or directed by the Engineer For _____ _____ Dollars _____ Cents, per square yard	\$ _____	\$ _____
11.	2 Each	Concrete Piers for Aerial Sewer Crossings, including excavation, Class "A" concrete, steel reinforcement, pipe straps, and appurtenances as shown on the Plans or where directed by the Engineer For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
BID FORM B, TOTAL AMOUNT BID, ITEMS 1 THROUGH 11 INCLUSIVE			\$ _____	

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM C – SEWER LINE S-3

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
1.	2,672 L.F.	Replacement of existing gravity sewer with 8-inch sanitary gravity sewer by Open-Cut where shown on the Plans or directed by the Engineer, including sanitary sewer pipe, flexible couplings, excavation and backfill, complete in place, as specified herein For _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
2.	40 L.F.	Replacement of existing gravity sewer with 8-inch Specially Lined Class 350 Ductile Iron Pipe gravity sewer by Open-Cut where shown on the Plans or directed by the Engineer, including sanitary sewer pipe, flexible couplings, excavation and backfill, complete in place, as specified herein For _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM C – SEWER LINE S-3 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
3.	611 L.F.	Renovation of existing 8-inch Gravity Sewer Line with new 10-inch HDPE pipe using pipe bursting, including all television inspection, crushed stone backfill, cleaning, bypass pumping, and connections to new and existing manholes For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
4.	100 L.F.	6-inch SDR 26 PVC Pipe for Sewer Service Connections installed vertically or horizontally, complete in place, including all excavation and backfilling For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM C – SEWER LINE S-3 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
5.	5 Each	Sewer Service Connections, complete in place, including 6-inch Sewer Service Saddle, adapters if required, excavation, backfilling, 6-inch cleanout with riser and plug, inspection box, and all incidentals For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
6.	13 Each	Replacement of existing manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø standard manhole and connection of all existing lines to manholes, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM C – SEWER LINE S-3 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
7.	2 Each	Replacement of existing manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø drop manhole and connection of all existing lines to manholes, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
8.	1 Each	Standard manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø standard manhole and connection of all existing lines to manholes, frame and cover, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM C – SEWER LINE S-3 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
9.	68 V.F.	Manhole Barrel Extensions for 4'-0" Ø standard manhole as shown on the Plans or where directed by the Engineer and as specified herein, complete in place For _____ _____ Dollars _____ Cents, per vertical foot	\$ _____	\$ _____
10.	100 C.Y.	TDOT No. 67 Crushed Stone for backfill of ditch under streets or where ordered by the Engineer For _____ _____ Dollars _____ Cents, per cubic yard	\$ _____	\$ _____
11.	50 C.Y.	Dense Grade Aggregate compacted for Traffic Bound Surfacing and/or Base Course and/or Backfill where sewer lines are constructed under existing paved surfaces and where directed by the Engineer For _____ _____ Dollars _____ Cents, per cubic yard	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM C – SEWER LINE S-3 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
12.	20 C.Y.	Asphaltic concrete pavement binder course where directed by Engineer or shown on the Plans For _____ _____ Dollars _____ Cents, per cubic yard	\$ _____	\$ _____
13.	10 C.Y.	Asphaltic concrete pavement final resurfacing where directed by Engineer or shown on the Plans For _____ _____ Dollars _____ Cents, per cubic yard	\$ _____	\$ _____
14.	2,750 L.F.	Standard temporary Silt Fence with Hay or Straw Bales, complete in place, as shown on the Plans or where directed by the Engineer For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM C – SEWER LINE S-3 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
15.	5 Each	Impervious Check Dam installed at locations shown on the Plans or where ordered by the Engineer For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
16.	50 S.Y.	Rip-Rap, hand placed where shown on the Plans or directed by the Engineer For _____ _____ Dollars _____ Cents, per square yard	\$ _____	\$ _____
BID FORM C, TOTAL AMOUNT BID, ITEMS 1 THROUGH 16 INCLUSIVE			\$ _____	

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM D – SEWER LINE S-4

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
1.	2,902 L.F.	Replacement of existing gravity sewer with 10-inch sanitary gravity sewer by Open-Cut where shown on the Plans or directed by the Engineer, including sanitary sewer pipe, flexible couplings, excavation and backfill, complete in place, as specified herein For _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
2.	240 L.F.	Replacement of existing gravity sewer with 10-inch Specially Lined Class 350 Ductile Iron Pipe gravity sewer by Open-Cut where shown on the Plans or directed by the Engineer, including sanitary sewer pipe, flexible couplings, excavation and backfill, complete in place, as specified herein For _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM D – SEWER LINE S-4 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
3.	903 L.F.	Renovation of existing 8-inch Gravity Sewer Line with new 10-inch HDPE pipe using pipe bursting, including all television inspection, crushed stone backfill, cleaning, bypass pumping, and connections to new and existing manholes For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
4.	100 L.F.	6-inch SDR 26 PVC Pipe for Sewer Service Connections installed vertically or horizontally, complete in place, including all excavation and backfilling For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM D – SEWER LINE S-4 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
5.	5 Each	Sewer Service Connections, complete in place, including 6-inch Sewer Service Saddle, adapters if required, excavation, backfilling, 6-inch cleanout with riser and plug, inspection box, and all incidentals For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
6.	16 Each	Replacement of existing manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø standard manhole and connection of all existing lines to manholes, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM D – SEWER LINE S-4 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
7.	2 Each	Replacement of existing manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø drop manhole and connection of all existing lines to manholes, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
8.	3 Each	Standard manhole where shown on the Plans or directed by the Engineer, including 4'-0" Ø standard manhole and connection of all existing lines to manholes, frame and cover, all grade rings, invert, excavation and all crushed stone backfill, complete in place and as specified herein For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM D – SEWER LINE S-4 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
9.	51 V.F.	Manhole Barrel Extensions for 4'-0" Ø standard manhole as shown on the Plans or where directed by the Engineer and as specified herein, complete in place For _____ _____ Dollars _____ Cents, per vertical foot	\$ _____	\$ _____
10.	2 Each	Abandon Existing Manhole, complete in place, including all excavation and crushed stone backfill For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____
11.	400 C.Y.	TDOT No. 67 Crushed Stone for backfill of ditch under streets or where ordered by the Engineer For _____ _____ Dollars _____ Cents, per cubic yard	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM D – SEWER LINE S-4 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
12.	100 C.Y.	Dense Grade Aggregate compacted for Traffic Bound Surfacing and/or Base Course and/or Backfill where sewer lines are constructed under existing paved surfaces and where directed by the Engineer For _____ _____ Dollars _____ Cents, per cubic yard	\$ _____	\$ _____
13.	60 C.Y.	Asphaltic concrete pavement binder course where directed by Engineer or shown on the Plans For _____ _____ Dollars _____ Cents, per cubic yard	\$ _____	\$ _____
14.	30 C.Y.	Asphaltic concrete pavement final resurfacing where directed by Engineer or shown on the Plans For _____ _____ Dollars _____ Cents, per cubic yard	\$ _____	\$ _____

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM D – SEWER LINE S-4 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
15.	3,400 L.F.	Standard temporary Silt Fence with Hay or Straw Bales, complete in place, as shown on the Plans or where directed by the Engineer For _____ _____ Dollars _____ Cents, per linear foot	\$ _____	\$ _____
16.	25 S.Y.	Removal by saw-cutting and replacement of Sidewalks, Concrete Driveways and Paved Ditches using Class "A" Concrete as shown on the Plans or where directed by Engineer, complete in place For _____ _____ Dollars _____ Cents, per square yard	\$ _____	\$ _____
17.	6 Each	Impervious Check Dam installed at locations shown on the Plans or where ordered by the Engineer For _____ _____ Dollars _____ Cents, per each	\$ _____	\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM D – SEWER LINE S-4 (cont'd)

ITEM NUMBER	APPROXIMATE QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
18.	300 S.Y.	Rip-Rap, hand placed where shown on the Plans or directed by the Engineer For _____ _____ Dollars _____ Cents, per square yard	\$ _____	\$ _____

**BID FORM D, TOTAL AMOUNT BID,
ITEMS 1 THROUGH 18 INCLUSIVE**

\$ _____

BID FORM
2090 – December 2023

8. CONTRACT 23-01 – SEWER SYSTEM REHABILITATION (cont'd)
BID FORM E – BID SUMMARY

ITEM NUMBER	:	:	DESCRIPTION	:	:	TOTAL PRICE
BID FORM A			Sewer Line S-1 (Repeat from BF-5)			\$ _____
BID FORM B			Sewer Line S-2 (Repeat from BF-10)			\$ _____
BID FORM C			Sewer Line S-3 (Repeat from BF-17)			\$ _____
BID FORM D			Sewer Line S-4 (Repeat from BF-25)			\$ _____
TOTAL BID CONTRACT 23-01:						\$ _____

Note: The Owner reserves the right to delete any or all BID FORMS from the work without price adjustment and to select any combination of BID FORMS in determining the low bidder for the contract.

9. Time of Commencement and Completion

The Bidder further proposes and agrees hereby to commence the work with adequate force and equipment on a date to be specified in a written order of the Engineer, and complete all work within the calendar days shown:

Contract 23-01: Two Hundred Seventy (270) consecutive calendar days

10. Liquidated Damages

The Bidder further understands that if the work is not completed within the time specified, that any additional engineering and resident construction observation costs incurred by the Owner due to the Contractor exceeding the time allowed for completion plus other damages, including the Owner's administrative cost, will be deducted on a per calendar day basis from the compensation otherwise due him in accordance with the General Conditions for each day thereafter, Sundays and holidays included, that work remains uncompleted.

Contract 23-01: One Thousand (\$1,000.00) Dollars per calendar day

11. Time Limit for Execution of Documents

The undersigned further agrees that, in case of failure on his part to execute the said Contract and the Bond(s) within fourteen (14) consecutive calendar days after written notice being given of the award of the Contract, the check or bid bond accompanying this bid and the monies payable thereon shall be paid into the funds of the City of Smithville, Tennessee as liquidated damages for such failure; otherwise the check or bid bond accompanying this BID FORM shall be returned to the undersigned.

12. Bid Guaranty

Attached hereto is a certified check on the _____
Bank of _____ or a Bid Bond on the form
provided for the sum of _____ Dollars (\$_____) made
payable to the City of Smithville, Tennessee to ensure that the Contractor
will execute the Construction Contract and the Contract Bonds.

13. Interested Parties

The undersigned, as Bidder, hereby declares that the only person or persons interested in the BID FORM as principal or principals is or are named herein, and that no other person herein mentioned has any interest in this BID FORM or in the Contract to be entered into; that this BID FORM is made without connection with any other person, company, or parties making a bid or proposal and that it is in all respects fair and in good faith without collusion or fraud.

BID FORM
2090 – December 2023

NAME

ADDRESS

14. Addenda

I hereby certify that I have received, read and examined the following numbered Addenda: _____, _____, _____, _____, _____, _____, _____.

BY: _____
Name of Bidder

Address of Bidder

Address of Bidder

Signature of Authorized Representative

Title

ATTEST (For Corporations)
WITNESS (For Non-Corporations)

Name

Title

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____

_____ as Principal, and _____

as Surety, are hereby held and firmly bound unto _____

as owner in the penal sum of _____ 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.

Signed, this _____ day of _____, 20____.

The condition of the above obligation is such that whereas the Principal has submitted to _____ a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing for the

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 therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

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

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hand 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.

_____ (L.S.)

Principal

Surety

SEAL

By: _____

ACKNOWLEDGEMENT REGARDING BIDDER SAM REGISTRATION

Pursuant to 2 CFR Parts 183 and 215 and the requirement of the U.S. Department of Housing and Urban Development (HUD), contractors procured directly by grantees, sub-grantees, and/or sub-recipients of HUD funds, including CDBG are required to have an active registration in the System of Award Management (SAM). This document shall be completed and submitted as part of the bid proposal.

1. By submitting this proposal, the prospective bidder certifies that it has an active registration in SAM that is not set to expire within the next 90 days.
2. By submitting this proposal, the prospective bidder certifies neither it, its principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
3. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies.
4. Further, the prospective bidder shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. By submitting this proposal, it is agreed that should the proposed covered transaction be entered into, the prospective bidder will not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.
6. It is further agreed that by submitting this proposal, the prospective bidder will include Certification of Subcontractor Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion without modification, in all lower-tier covered transactions and in all solicitations for lower-tier covered transactions.

Provide the following information as detailed in the prospective bidder's SAM registration:

Entity Name: _____

Address: _____

City: _____ State: _____ Zip: _____

SAM Entity ID: _____ Expiration Date: _____

Active Exclusions: Yes No

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

Certification by Bidder

Bidder/Firm: _____

Address: _____

City: _____ State _____ Zip _____

- | | | | |
|---|-----|----|-----------|
| 1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. | Yes | No | |
| 2. Compliance reports were required to be filed in connection with such contract or subcontract. | Yes | No | |
| 3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. | Yes | No | None Req. |
| 4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? | Yes | No | |

Bidder Name: _____

Title: _____

Signature: _____

Date: _____

**CERTIFICATION OF BIDDER REGARDING USE OF
FEMALE/MINORITY SUBCONTRACTORS**

This certification is required for the contractor to demonstrate that when subcontractors are to be used on this project, an attempt will be made to utilize female/minority owned firms.

Documentation must be on file to show who has been contacted.

Certification by Bidder

Bidder/Firm: _____

Address: _____

City: _____ State _____ Zip _____

I, _____, certify that every attempt was made to utilize female/minority contractors on this project.

Bidder Name: _____

Title: _____

Signature: _____

Date: _____

CERTIFICATION OF SUBCONTRACTOR REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND EXCLUSION

Pursuant to 2 CFR Parts 183, 215, and 2424, and the requirement of the U.S. Department of Housing and Urban Development (HUD), subcontractors for projects that are funded in whole or in part by HUD funds must provide information concerning the entity's debarment, suspension, ineligibility or exclusion status. This document shall be completed and provided to the prime contractor.

1. By signing and submitting this proposal, the prospective lower-tier participant certifies that neither it, its principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Further, the Participant provides the certification set out below:
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies.
3. Further, the Participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneously by reason of changed circumstances.
4. By submitting this document, it is agreed that should the proposed covered transaction be entered into, the Participant will not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.

The subcontracting entity may satisfy the requirement of this document via one of the two options below:

Option 1: SAM.gov Active Registration

Entity Name: _____

Address: _____

City: _____ State: _____ Zip: _____

SAM Entity ID: _____ Expiration Date: _____

Active Exclusions: Yes No

Option 2: Signed Certification

Entity Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Entity Representative: _____ Title: _____

Signature: _____

**CERTIFICATION OF BIDDER REGARDING
SECTION 3 AND SEGREGATED FACILITIES**

NAME OF PRIME CONTRACTOR: _____

PROJECT NUMBER: _____

The undersigned hereby certifies that

- Section 3 provisions are included in the Contract.
- If contract equals or exceeds \$200,000, the contractor will comply with all Section 3 requirements detailed in the CDBG Manual, including:
 - reporting total labor hours worked,
 - reporting total labor hours worked by Section 3 workers,
 - reporting total labor hours worked by Targeted Section 3 workers,
 - Providing documentation of Section 3 worker status as required for all workers for the project under the covered contract.
- No segregated facilities will be maintained as required by Title VI of the Civil Rights Act of 1964.

Name & Title of Signer (Print or Type)

Signature

Date

DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF _____

COUNTY OF _____

The undersigned, principal officer of _____, an employer of five (5) or more employees contracting with _____ government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the Tennessee Code Annotated.
3. The Company is in compliance with T.C.A. § 50-9-113.

Further affiant saith not.

Principal Officer

STATE OF _____

COUNTY OF _____

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of _____, 20____.

Notary Public

My commission expires: _____

**CERTIFICATION BY PROPOSED SUBCONTRACTOR
REGARDING EQUAL EMPLOYMENT OPPORTUNITY**

NAME OF PRIME CONTRACTOR: _____

PROJECT NUMBER: _____

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the subcontractor has not filed a compliance report due under applicable instructions, such subcontractor shall be required to submit a compliance report before the owner approves the subcontract or permits work to begin under the subcontract.

SUBCONTRACTOR'S CERTIFICATION

Subcontractor Name: _____

Address: _____

City: _____ State _____ Zip _____

- | | | | |
|---|-----|----|-----------|
| 1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. | Yes | No | |
| 2. Compliance reports were required to be filed in connection with such contract or subcontract. | Yes | No | |
| 3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. | Yes | No | None Req. |
| 4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? | Yes | No | |

Name: _____

Title: _____

Signature: _____

Date: _____

**CERTIFICATION OF PROPOSED SUBCONTRACTOR
REGARDING SECTION 3 AND SEGREGATED FACILITIES**

NAME OF SUBCONTRACTOR: _____

PROJECT NUMBER: _____

The undersigned hereby certifies that

- Section 3 provisions are included in the Contract.
- If contract equals or exceeds \$200,000, the contractor will comply with all Section 3 requirements detailed in the CDBG Manual, including:
 - reporting total labor hours worked,
 - reporting total labor hours worked by Section 3 workers,
 - reporting total labor hours worked by Targeted Section 3 workers,
 - Providing documentation of Section 3 worker status as required for all workers for the project under the covered contract.
- No segregated facilities will be maintained as required by Title VI of the Civil Rights Act of 1964.
-

Name & Title of Signer (Print or Type)

Signature

Date

**STATEMENT OF COMPLIANCE CERTIFICATE
ILLEGAL IMMIGRANT**

EACH CONTRACTOR BIDDING SHALL FILL IN AND SIGN THE FOLLOWING

Bidder Name: _____

Address: _____

City: _____ State _____ Zip _____

This is to certify that _____ have fully complied with all the requirements of T.C.A. § 12-3-309, stating:

- (1) No state governmental entity shall contract to acquire goods or services from any person who knowingly utilizes the services of illegal immigrants in the performance of a contract for goods or services entered into with a state governmental entity;
- (2) No person may contract to supply goods or services to a state governmental entity if that person knowingly utilizes the services of illegal immigrants in the performance of a contract to supply goods or services entered into with the state or a state entity.

All Bidders for construction services on this project shall be required to submit an affidavit (by executing this compliance document) as part of their bid, that attests that such Bidder shall comply with requirements of T.C.A. § 12-3-309.

Name: _____

Title: _____

Signature: _____

Date: _____

CERTIFICATION OF NON-BOYCOTT OF ISRAEL

The Bidder certifies that it is not currently engaged in, and will not for the duration of the contract engage in, a boycott of Israel as defined by Tenn. Code Ann. § 12-4-119. This provision shall not apply to contracts with a total value of less than two hundred fifty thousand dollars (\$250,000) or to contractors with less than ten (10) employees.

According to the law, a boycott of Israel means engaging in refusals to deal, terminating business activities, or other commercial actions that are intended to limit commercial relations with Israel, or companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel to do business, or persons or entities doing business in Israel, when such actions are taken:

- 1) In compliance with, or adherence to, calls for a boycott of Israel, or
- 2) In a manner that discriminates on the basis of nationality, national origin, religion, or other unreasonable basis, and is not based on a valid business reason. Tenn. Code Ann. § 12-4-119.

I certify this statement to be true and correct.

Bidder Name Printed

Date

Signature of Bidder

Company

**IRAN DIVESTMENT
ACT**

In compliance with the Iran Divestment Act (State of Tennessee 2016, Public Chapter No. 817), which became effective on July 1, 2016, certification is required of all bidders on contracts over \$1,000.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party hereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to T.C.A. § 12-12-106.

I affirm, under the penalties of perjury, this statement to be true and correct.

_____ Date

_____ Signature of Bidder

_____ Company

A bid shall not be considered for award nor shall award be made where the foregoing certification has been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefor. The **City/County of _____** may award a bid to a bidder who cannot make the certification, on case-by-case basis, if:

1. The investment activities in Iran were made before July 1, 2016, the investment activities in Iran have not been expanded or reviewed on or after July 1, 2016, and the person has adopted, publicized, and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran; or
2. The **City/County of _____** makes a determination that the goods or services are necessary for the **City/County of _____** to perform its functions and that, absent such an exemption, the political subdivision will be unable to obtain the goods or services for which the contract is offered. Such determination shall be made in writing and shall be a public document.

NOTICE

Tenn. Code Ann. § 12-12-106 requires the chief procurement officer to publish, using credible information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105.

For these purposes, the State intends to use the attached list of “Entities determined to be non-responsive bidders/offerers pursuant to the New York State Iran Divestment Act of 2012.”

While inclusion on this list would make a person ineligible to contract with the state of Tennessee, if a person ceases its engagement in investment activities in Iran, it may be removed from the list.

If you feel as though you have been erroneously included on this list please contact the Central Procurement Office at CPO.Website@tn.gov.

List Date: May 4, 2022

Source: <https://www.ogs.ny.gov/iran-divestment-act-2012>

1. Ak Makina, Ltd.
2. Amona
3. Bank Markazi Iran (Central Bank of Iran)
4. Bank Mellat
5. Bank Melli Iran
6. Bank Saderat Iran
7. Bank Sepah
8. Bank Tejarat
9. China Precision Machinery Import- Export Corporation (CPMIEC)
10. ChinaOil (China National United Oil Corporation)
11. China National Offshore Oil Corporation (CNOOC)
12. China National Petroleum Corporation (CNPC)
13. Indian Oil Corporation
14. Kingdream PLC
15. Naftiran Intertrade Co. (NICO)
16. National Iranian Tanker Co. (NITC)
17. Oil and Natural Gas Corporation (ONGC)
18. Oil India, Ltd.
19. Persia International Bank
20. Petroleos de Venezuela (PDVSA Petróleo, SA)
21. PetroChina Co., Ltd.
22. Petronet LNG, Ltd.
23. Sameh Afzar Tajak Co. (SATCO)
24. Shandong FIN CNC Machine Co., Ltd.
25. Sinohydro Co., Ltd.
26. Sinopec Corp. (China Petroleum & Chemical Corporation)
27. SKS Ventures
28. SK Energy Co., Ltd.
29. Som Petrol AS
30. Unipet (China International United Petroleum & Chemicals Co., Ltd.)
31. Zhuhai Zhenrong Co.



STATE OF TENNESSEE

BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352.

Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING – REQUIRED FOR CONTRACTS OVER \$100,000 *Certification for Contracts, Grants, Loans, and Cooperative Agreements*

The undersigned certifies, to the best of his or her knowledge and belief, that:

- No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Authorized Representative	Date
Printed Name and Title	Phone Number / Email Address

Status of Land Acquisition

All permanent easements, land purchases, city/county/state right of ways, Department of Transportation, Corps of Engineers and railroad permits and any other land access agreements must be obtained and recorded (if applicable) with the appropriate agencies prior to ECD approval of plans and specifications.

Please check the following boxes and sign below:

Yes No N/A

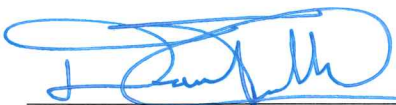
All permanent easements necessary for the construction of this project have been acquired and recorded with the appropriate agency.

All land acquisition necessary for the construction of this project has been acquired and recorded with the appropriate agency.

All right-of-ways, permits, and land access agreements necessary for the construction of this project have been acquired and recorded with the appropriate agency(s).

OR

The construction of this project requires no acquisition of land, permanent easements, right-of-ways, permits or land access agreements.



Signature of grantee, engineer/architect,
or project administrator

4/16/2024

Date

**This form must be sent to ECD before we
can approve plans and specifications.**

CLEARANCE OF LOREC NOTATIONS for P&S APPROVAL

Project Name _____

Contract Number _____

Agency, Date and Notation 1:

Response to Notation 1:

Agency, Date and Notation 2:

Response to Notation 2:

Agency, Date and Notation 3:

Response to Notation 3:

This form must accompany Plans and Specifications sent to ECD.

DAVIS-BACON WAGE RATE

"General Decision Number: TN20240122 01/05/2024

Superseded General Decision Number: TN20230122

State: Tennessee

Construction Type: Heavy
Including Water and Sewer Line Construction

Counties: Campbell, Claiborne, Clay, Cumberland, De Kalb, Fentress, Hancock, Jackson, Morgan, Overton, Pickett, Putnam and White Counties in Tennessee.

HEAVY CONSTRUCTION PROJECTS (including sewer/water construction).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at

http://www.dol.gov/whd/govcontracts.

Modification Number Publication Date
 0 01/05/2024

ENGI0917-021 05/01/2017

	Rates	Fringes
Operating Engineers: Bulldozer and Crane.....	\$ 28.26	10.10

SUTN2009-121 12/02/2009

	Rates	Fringes
ELECTRICIAN.....	\$ 20.06	0.00
LABORER: Common or General.....	\$ 10.00 **	0.00
LABORER: Flagger.....	\$ 10.50 **	0.00
LABORER: Pipelayer.....	\$ 11.90 **	0.79
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 16.48 **	0.48
TRUCK DRIVER: Dump Truck.....	\$ 11.63 **	0.81

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====
** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at
<https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those

classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====


END OF GENERAL DECISION"



MAR 22 2013

MEMORANDUM NO. 213

TO: ALL CONTRACTING AGENCIES OF THE FEDERAL
GOVERNMENT AND THE DISTRICT OF COLUMBIA

FROM: 
MARY BETH MAXWELL
Acting Deputy Administrator

SUBJECT: Application of the Davis-Bacon and Related Acts requirement that wage rates for additional classifications, when “conformed” to an existing wage determination, bear a “reasonable relationship” to the wage rates in that wage determination

This Memorandum is notification from the Department of Labor’s Wage and Hour Division (WHD) of the proper application of the Davis-Bacon and Related Acts (DBRA) requirements for wage rates for additional classifications that are “conformed” to an existing wage determination by agency contracting officers. The regulations at 29 C.F.R. § 5.5(a)(1)(ii)(A) provide that contracting officers shall approve an additional classification and its proposed wage rate in conformance with an existing wage determination only when the work to be performed by the proposed classification is not performed by a classification in the wage determination and the proposed wage rate bears a “reasonable relationship” to the wages rates in the wage determination. Although this Memorandum primarily focuses on the “reasonable relationship” requirement, it is essential at the threshold to reiterate that a conformance is not appropriate when the work of the proposed classification is already performed by a classification on the wage determination. The conformance process is narrow in scope and has the limited purpose of establishing a new classification when it is necessary to do so because work needed to perform the contract is not performed by an existing classification. *See Cambridge Plaza*, ARB Case No. 07-102 (ARB Oct. 29, 2009). Accordingly, the WHD will not add a new classification through a conformance action unless the first criterion for issuance of a conformance is satisfied, i.e., the proposed work in question is not performed by any classification in the existing wage determination. 29 C.F.R. § 5.5(a)(1)(ii)(A)(1).

In those circumstances in which the duties of the proposed classification are not performed by any classification in the existing wage determination, the WHD will consider whether the proposed wage rate bears a “reasonable relationship” to the wage rates in the wage determination. In the past, WHD has generally approved proposed wage rates for a conformed skilled craft and a power equipment operator when such rates were not less than the rate for the lowest classification in the respective category on the contract wage determination. The practice of using the lowest rate in the relevant category as a benchmark also occurred on occasion with laborers and truck drivers. In keeping with the remedial purpose of the DBRA and the governing

regulations, the wage rate of the lowest skilled craft, laborer, power equipment operator, or truck driver classification on the contract wage determination has no longer been an automatic benchmark when reviewing conformance requests. WHD's approach of not using the lowest wage rate as a benchmark has been progressively implemented over the last year.

The Conformance Process

In accordance with 29 C.F.R. § 5.5(a)(1)(ii)(A), the contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and a wage rate (including fringe benefits) for the classification only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

Further, if the contractor, the laborers or mechanics (if known) to be employed in the classification or their representatives, and the contracting agency agree on the classification and wage rate proposed, a report of the action taken is sent by the contracting officer to the Administrator of WHD for approval, denial, or modification. The Administrator (or an authorized representative) shall respond within 30 days of receipt, or the contracting officer will be notified that more time is necessary. *See* 29 C.F.R. § 5.5(a)(1)(ii)(B). In the event that the contractor, the laborers or mechanics (if known) to be employed in the classification or their representatives, and the contracting agency do not agree on the classification and wage rate proposed, the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator of WHD for determination. The Administrator (or an authorized representative) shall issue a determination within 30 days of receipt and so advise the contracting officer, or the contracting officer will be notified that more time is necessary. *See* 29 C.F.R. § 5.5(a)(1)(ii)(C).

"Reasonable Relationship"

WHD previously typically approved conformance requests from contracting officers for wage rates (including fringe benefits) for skilled classifications and power equipment operators by automatically using as a benchmark the lowest rate for a skilled classification or power equipment operator, respectively, in the applicable wage determination. The practice of using the lowest rate in the relevant category as a benchmark also occurred on occasion with laborers and truck drivers. WHD has concluded, however, that it better reflects the regulatory requirement that "the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination" to consider the entirety of the rates within the relevant category on the wage determination and to not generally use as a benchmark the lowest rate within that category. The regulation at 29 C.F.R. §

5.5(a)(1)(ii)(A)(3) requires that the proposed wage rate bear a reasonable relationship to the “wage rates” on the wage determination and not to a particular rate or the lowest rate.

The category in which the requested additional classification falls is relevant to the reasonable relationship analysis. As background, classifications in wage determinations fall into four general categories: skilled crafts, laborers, power equipment operators, and truck drivers. To determine a “reasonable relationship,” the requested additional classification is compared to the classifications on the applicable wage determination within the same category. A proposed skilled craft classification is compared to skilled classifications in the wage determination; a proposed laborer classification is compared to existing laborer classifications; a proposed power equipment operator classification is compared to existing power equipment operator classifications; and a proposed truck driver classification is compared to existing truck driver classifications. See *Mistick Construction*, ARB Case No. 02-004 (June 24, 2003); *Tower Construction*, WAB Case No. 94-17 (Feb. 28, 1995).¹ Thus, when considering a conformance request for a skilled classification, WHD generally considers the entirety of the rates for the skilled classifications on the applicable wage determination and looks to where the proposed wage rate falls within the rates listed on the wage determination. Occasionally, however, a wage determination may contain some wage rates for laborer classifications that are higher than some wage rates for the skilled classifications or power equipment operators (likely because the laborers’ rates reflect union prevailing rates and the skilled crafts’ or power equipment operators’ rates reflect weighted average prevailing rates). On such occasions, the contracting officer should look to those skilled classifications whose rates are higher than the laborer classifications’ rates. See *M.Z. Contractors Co.*, WAB Case No. 92-06 (Aug. 25, 1992). If, however, most of the skilled classifications’ or power equipment operators’ rates are lower than the laborer classifications’ rates, then it may be reasonable to propose a rate that reflects the skilled classifications’ rates even if they are lower than the laborer classifications’ rates.

Additionally, whether the wage rates in the applicable category (skilled craft, laborer, power equipment operator, truck driver) in the wage determination are predominantly union prevailing wage rates or predominantly weighted average prevailing wage rates should be considered when proposing rates for an additional classification. For example, if a wage determination contains predominantly union prevailing wage rates for skilled classifications, it typically would be appropriate to look to the union sector skilled classifications in the wage determination and the rates for those classifications when proposing a wage rate for the additional classification. Conversely, if a wage determination contains predominantly weighted average prevailing wage rates for skilled classifications, it typically would be appropriate to look to the weighted average/non-union sector skilled classifications in the wage determination and the rates for those classifications when proposing a wage rate for the additional classification. If the wage rates in the applicable category are roughly half union prevailing rates and half weighted average prevailing rates, it would typically be appropriate to look to the lowest union rate and the highest weighted average rate (assuming the union rates are higher than the weighted average rates) when proposing a wage rate.

¹ Copies of Administrative Review Board (ARB) and Wage Appeals Board (WAB) decisions can be obtained from: www.oalj.dol.gov/libdba.htm.

While the majority of conformance requests are within the skilled classification category, the governing regulations and the principles outlined in this Memorandum apply to the other categories of workers – laborers, power equipment operators, and truck drivers. To meet the “reasonable relationship” test for a conformed power equipment operator or truck driver classification, the proposed wage rate should bear a reasonable relationship to the entirety of rates within the respective classification, and in particular to the union or weighted average rates in the classification (assuming union or weighted average rates prevail for the classification). When a conformance for a laborer classification is requested, WHD generally continues to use the common laborer rate already existing in the wage determination as a benchmark for the proposed rate.

Each conformance request and corresponding wage determination involves particular circumstances and therefore should be evaluated as such. The full range of wage rates on the wage determination for the appropriate category should be reviewed in the manner discussed above. When seeking conformed classifications and wage rates, the contractor and the contracting officer should not rely on a wage determination or conformance granted to another party regardless of the similarity of the work in question. *See, e.g., Inland Waters Pollution Control, Inc.*, WAB Case No. 94-12 (Sept. 30, 1994). Moreover, the contractor and the contracting officer should not prospectively rely on WHD’s prior approval of rates for application to a contract performed at the same location. *See E&M Sales, Inc.*, WAB Case No. 91-17 (Oct. 4, 1991). Although atypical, use of the “lowest skilled” rate may of course be appropriate when that rate in fact bears a reasonable relationship to the wage rates contained in the wage determination for the appropriate category. *See, e.g., Tower Construction*, WAB Case No. 94-17 (Feb. 28, 1995) (conformed wage rate, which equaled lowest skilled rate on wage determination, was reasonable).

In sum, contracting agencies should take the following steps when proposing a wage rate for a classification to be conformed to an existing wage determination:

- First, the contracting agency should determine the category (skilled crafts, laborers, power equipment operators, or truck drivers) of the classification which is being conformed.
- Second, the contracting agency should determine for that category whether union or weighted average/non-union sector rates prevail in the existing wage determination.
- Third, after reviewing the entirety of the rates within the appropriate sector in the applicable category, the contracting agency should determine a rate that bears a reasonable relationship to those rates on the wage determination.
- Fourth, the contracting agency should determine whether any of the considerations identified in this Memorandum apply (or whether any other relevant considerations apply). For example, if the classification being conformed is a skilled classification and some of the wage rates for skilled classifications in the wage determination are lower than the rates for laborer classifications, then the contracting agency should use those existing skilled classification rates that are higher than the laborer rates to determine the

proposed rate. And if the classification which is being conformed is a laborer classification, the proposed wage rate should generally use the existing common laborer wage rate as a benchmark.

Conclusion

The WHD Administrator has historically maintained broad discretion under the regulations to make determinations regarding proposed wage rates for additional classifications that are conformed to existing wage determinations. This broad discretion has been confirmed by the ARB and its predecessors, as illustrated by the decisions cited in this Memorandum, among others. In exercising that discretion, WHD ensures that wage rates (including fringe benefits) for the classification to be conformed bear a reasonable relationship to the range of rates for the classifications in the wage determination in the same category (skilled classifications, power equipment operators, laborers, and truck drivers), and not automatically to the lowest rate in the applicable category. Consistent with the governing regulations, contracting agencies should ensure that they request wage rates (including fringe benefits) for additional classifications in accordance with the principles set forth in this Memorandum. By following the guidance in this AAM, contracting agencies and contractors will benefit by receiving approvals from WHD that ensure consistency in conformed wage rates and increase efficiencies in government.

In conjunction with the guidance provided in this AAM, WHD has posted on www.dol.gov/whd/govcontracts/dbra.htm a series of frequently asked questions that include examples which will provide additional guidance regarding the reasonable relationship requirement in the conformance process. WHD also is updating its Prevailing Wage Resource Book and will provide compliance assistance on DBRA conformances at future Prevailing Wage Conferences. In addition, WHD's Branch of Construction Wage Determinations is available to assist with any questions.

Appendix II to Part 200 - Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

(A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a

contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended - Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Debarment and Suspension (Executive Orders 12549 and 12689) - A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352) - Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See § 200.323.

(K) See § 200.216.

(L) See § 200.322.

[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014; 85 FR 49577, Aug. 13, 2020]

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20____, by and between the City of Smithville, Tennessee, herein called "Owner", acting herein through its Mayor and Aldermen, and

_____ (a corporation) (a partnership)
_____ (an individual doing business as _____)

TERMS
of _____, County of _____, and State of _____, hereinafter called "Contractor".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows:

Contract 23-01 – Sewer System Rehabilitation

hereinafter called "the project", for the sum of _____ Dollars (\$_____) and all extra work in connection therewith, under the terms as stated in the General and Special Conditions of the Contract; and at this (its or their) own property cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, Supplemental General Conditions and Special Conditions of the Contract, the plans, which include all maps, plats, blue prints, and other drawings and printed or written explanatory matter thereof, the specifications and contract documents therefore as prepared by J. R. Wauford & Company, Consulting Engineers, Inc., herein entitled "the Architect/Engineer", and as enumerated in Paragraph 1 of the Supplemental General Conditions, all of which are made a part hereof and collectively evidence and constitute the contract.

The Contractor hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within 270 consecutive calendar days thereafter. The Contractor further agrees to pay, as liquidated damages, the sum of \$1,000 for each consecutive calendar day thereafter as hereinafter provided in Paragraph 3 of the Supplemental General Conditions.

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the contract, subject to additions and deductions, as provided in the General Conditions of the Contract, and to make payments on account thereof as provided in Paragraph 3, "Payments to Contractor", of the Supplemental General Conditions.

IN WITNESS WHEREOF, the parties to these presents have executed this contract in six (6) counterparts, each of which shall be deemed an original, in the year and day first above mentioned.

(Seal)
ATTEST:

(Owner)

(Secretary)

By: _____

(Witness)

(Title)

(Seal)

(Contractor)

(Secretary)

By: _____

(Witness)

(Title)

(Address, City, State, and Zip Code)

BONDING AND INSURANCE

1. This Attachment sets forth bonding and insurance requirements for grants. No other bonding and insurance requirements shall be imposed other than those normally required by the grantee.
2. Except as otherwise required by law, a grant that requires the contracting (or subcontracting) for construction or facility improvements shall provide for the grantee to follow its own requirements relating to bid guarantees, performance bonds, and payment bonds unless the construction contract or subcontract exceeds \$150,000 (See 2 CFR 200.88). For those contracts or subcontracts exceeding \$150,000, the Federal agency may accept the bonding policy and requirements of the grantee provided the Federal agency has made a determination that the Government's interest is adequately protected. If such a determination has not been made, the minimum requirements shall be as follows:
 - a. A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.
 - b. A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.
 - c. A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.
3. Where the Federal Government guarantees or insures the repayment of money borrowed by the grantee, the Federal agency, at its discretion, may require adequate bonding and insurance if the bonding and insurance requirements of the grantee are not deemed adequate to protect the interest of the Federal Government.
4. Where bonds are required in the situations described above, the bonds shall be obtained from companies holding certificates of authority as acceptable sureties (31 CFR 223).

NOTE: AIA Document A311 is acceptable for use as Performance and Payment Bonds.

CERTIFICATE OF OWNER'S ATTORNEY

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

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

Date: _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____ hereinafter called
(Corporation, Partnership or Individual)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called "Surety", are held and firmly bound unto

City of Smithville, Tennessee
(Name of Owner)

104 East Main Street, Smithville, Tennessee 37166
(Address of Owner)

hereinafter called "Owner", in the penal sum of _____
Dollars _____ Cents (\$_____) in lawful money of the United States, for the
payment of which sum well and truly to be made, we bind ourselves, successors, and
assigns, 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 Owner dated _____ day of _____,
20__, a copy of which is hereto attached and made a part hereof for the construction of:

Sewer System Improvements
Contract 23-01 – Sewer System Rehabilitation
Wauford Project No. 2090

NOW, THEREFORE, if the Principal shall well, truly and faithfully performs its
duties, all the undertakings, covenants, terms, conditions, and agreements of said
contract during the original term thereof, and any extensions thereof which may be
granted by the Owner, with or without notice to the Surety, and if he shall satisfy all
claims and demands incurred under such contract, and shall fully indemnify and save
harmless the Owner from all cost and damages which it may suffer by reason of failure
to do, and shall reimburse and repay the Owner all outlay and expense which the Owner
may incur in making good any default, then this obligation shall be void; otherwise to
remain in full force and effect.

PERFORMANCE BOND
2090 – December 2023

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in 6 counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20__.

WITNESSES:

Principal

BY: _____

Address

(SEAL)

WITNESSES:

Surety

BY: _____

Attorney-in-Fact

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

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____ hereinafter called
(Corporation, Partnership or Individual)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called "Surety", are held and firmly bound unto

City of Smithville, Tennessee
(Name of Owner)

104 East Main Street, Smithville, Tennessee 37166
(Address of Owner)

hereinafter called "Owner", in the penal sum of _____
Dollars _____ Cents (\$_____) in lawful money of the United States, for the
payment of which sum well and truly to be made, we bind ourselves, successors, and
assigns, 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 Owner dated _____ day of _____,
20___, a copy of which is hereto attached and made a part hereof for the construction of:

Sewer System Improvements
Contract 23-01 – Sewer System Rehabilitation
Wauford Project No. 2090

NOW, THEREFORE, if the Principal shall promptly make payment to all persons,
firms, subcontractors, and corporations furnishing materials for or performing labor in
the prosecution of the work provided for in such contract, and any authorized extension
or modification thereof, including all amounts due for materials, lubricants, oil, gasoline,
coal and coke, repairs on machinery, equipment and tools consumed or used in
connection with the construction of such work, and all insurance premiums on said work,
and for all labor, performed in such work whether by subcontractor or otherwise, then
this obligation shall be void; otherwise to remain in full force and effect.

PAYMENT BOND
2090 – December 2023

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in 6 counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20__.

WITNESSES:

Principal

BY: _____

Address

(SEAL)

WITNESSES:

Surety

BY: _____

Attorney-in-Fact

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

SECTION 1

GENERAL SCOPE AND SPECIAL PROVISIONS

1. Scope

The work to be accomplished under these Detailed Specifications consists of furnishing all labor, materials, equipment and services necessary for the construction of Sewer System Improvements, Contract 23-01 – Sewer System Rehabilitation for the City of Smithville, Tennessee. The work involved is in one (1) contract and consists of the following generally described work:

CONTRACT 23-01 SEWER SYSTEM REHABILITATION

- Replacement of approximately 3,141 L.F. of 10-inch Gravity Sewer via Open-Cut Methods
- Replacement of approximately 3,820 L.F. of 8-inch Gravity Sewer via Open-Cut Methods
- Replacement of approximately 1,999 L.F. of 8-inch Gravity Sewer via Pipe Bursting Methods
- 48 Precast Manholes

and appurtenances as described in these Detailed Specifications.

All of the work is described more fully in these Detailed Specifications.

2. Execution and Coordination of the Work

It is intended that the work covered by this Contract be done so as to cause the minimum interference with the normal operation of the existing facilities of the City of Smithville.

The Contractor shall be required to organize and schedule his work so as to keep the existing facilities in full operation during the construction period insofar as is consistent with the nature of the construction work to be performed.

The manner in which shutdowns will be made and the Contractor's work schedule are subject to the approval of the Owner and the Engineer. Although every effort will be made to cause the minimum amount of interference with the Contractor's work, the interest of the City of Smithville in regard to the existing facilities must always take precedence over the construction work.

THEREFORE, THE RIGHT IS RESERVED BY THE OWNER TO PUT ANY LINES OR OTHER FACILITIES THAT MAY BE SHUT DOWN FOR THE

CONSTRUCTION WORK BACK INTO SERVICE WHEN AN EMERGENCY ARISES.

The importance of maintaining the flow in the existing sanitary sewer lines is paramount.

If the Contractor does plug or interrupt the flow through any sanitary sewer line that will cause sewage to backup and cause flooding or damage to any public or private property, he must at his own expense provide pumps, bypass pipes, operators or any other necessary equipment and personnel to reroute the sewage flow into another acceptable portion of the sewer system unless provided for hereinafter. The cost of rerouting sewage flow during construction is NOT a separate pay item and shall be included in the cost for other items. **NO BYPASSING OF UNTREATED SEWAGE TO THE SURFACE OF THE GROUND OR TO WATERCOURSES WILL BE PERMITTED** unless the Contractor secures written permission from the Tennessee Department of Environment and Conservation and/or the U.S. Environmental Protection Agency.

The Contractor must have sufficient materials, equipment, labor, and supervision available to accomplish the work required in the time allocated for any shutdown of the existing sanitary sewer system.

3. Temporary Traffic Control Plan

When work is conducted within the right-of-way of transportation agencies or city or county roadways, the Contractor shall provide temporary traffic control (TTC) in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). TTC devices shall include but shall not be limited to signs, barricades, flagmen and channelization devices. The Contractor shall provide TTC for all roadway users including motorists, bicyclists and pedestrians. All TTC shall be in accordance with the Americans with Disabilities Act of 1990, Title II, Paragraph 35.130.

4. Time of Completion and Liquidated Damages (see **Article 12** of the General Conditions)

Time is of the essence on this contract and work shall be prosecuted in a timely manner. The work shall be constructed in such a manner that portions of the systems can be placed into service as soon as possible.

Time of completion after notice to proceed will be as follows:

Contract 23-01: Two Hundred Seventy (270) consecutive calendar days

If the work is not completed in the time specified, liquidated damages in the amount of one thousand dollars (\$1,000.00) per calendar day will be deducted from the compensation otherwise due to the Contractor(s) in accordance with the Contract Documents for each calendar day thereafter, Sundays and holidays included, that the work remains uncompleted.

5. Bypass Pumping

The Contractor shall bypass the sewage flow in the existing sewer around the section where construction is taking place by plugging an existing manhole and pumping the sewage into an existing downstream manhole. The pumps and bypass lines shall be of adequate capacity and size to handle any flow encountered. The Contractor shall make provisions to bypass pump wastewater flow from individual sanitary sewer service lines when sanitary sewer service lines are disconnected from the collector or interceptor sewer and must remain disconnected overnight. The Contractor shall submit a bypass pumping plan that includes the following items at a minimum:

- 24 hour human operator (mechanic) during rain events
- 4 hour human checks (mechanic) during periods of no rain
- Auto dialer for failure alarms
- Redundant capacities

UNDER NO CIRCUMSTANCES WILL THE PUMPING OF RAW SEWAGE ON PRIVATE PROPERTY, OR INTO STREAMS STORM SEWERS OR IN STREETS BE ALLOWED.

Except as may be approved by the Engineer at the end of each working day, temporary connections shall be made so that overnight pumping is not required. BYPASS PUMPING OF SEWAGE SHALL BE CONSIDERED A SUBSIDIARY OBLIGATION OF THIS CONTRACT AND NO SEPARATE PAYMENT SHALL BE MADE FOR THIS WORK.

6. Guarantee – One Year Warranty

The Contractor(s) shall guarantee all work performed under this contract for a period of one year after the date of Substantial Completion in accordance with requirements of **Paragraph 13.12** of the General Conditions.

7. Engineer's Authority

See **Article 9** of the General Conditions.

8. Shop Drawings (See Paragraphs 6.24 – 6.28 of the General Conditions)

The Contractor(s) shall submit shop drawings for all preconstruction submittals, materials, equipment, and services used on this project.

For submittals containing less than 25 pages, the Contractor shall email one (1) digital copy of the submittal to ntoshopdrawings@jrwauford.com. For submittals containing 25 pages or more, the Contractor shall submit one (1) digital copy and three (3) hard copies to the Engineer for review. Note that all sheets shall be printed at 100% of original size.

THE ENGINEER WILL HOLD ALL SUBMITTED OR REVIEWED SHOP DRAWINGS UNTIL THE CONTRACTOR HAS PROVIDED ACCEPTABLE SUBMITTALS FOR THE CONTRACTOR'S PLANNED ORDER OF WORK, PROGRESS SCHEDULE, PRE-CONSTRUCTION VIDEOS/PICTURES AND SHOP DRAWING LOG. IF REQUESTED BY THE CONTRACTOR, AN ACCEPTABLE TEMPLATE OF THE SHOP DRAWING LOG WILL BE PROVIDED BY THE ENGINEER

REJECTION OF THE SAME SHOP DRAWING ON THREE (3) SEPARATE OCCASIONS WILL CONSTITUTE GROUNDS FOR TOTAL REJECTION OF THE PROPOSED EQUIPMENT MANUFACTURER OR SUPPLIER AS BEING UNABLE OR UNWILLING TO MEET THESE DETAILED SPECIFICATIONS.

Shop drawings submittals shall include a transmittal letter listing the submittal description, project name, project contract number, and project location. Shop drawings shall be checked by the Contractor(s) and evidence of such checking shall be indicated on the transmittal letter. The Contractor(s) shall be completely responsible for accuracy, completeness, compliance with Plans and Detailed Specifications, and compatibility, the Engineer's approval notwithstanding. WORK SHALL BE PERFORMED ONLY BY USE OF APPROVED SHOP DRAWINGS. THE CONTRACTOR(S) SHALL PLAINLY MARK ON HIS SUBMITTAL THE ITEM OR ITEMS IN WHICH HE IS REQUESTING APPROVAL. FAILURE TO DO SO WILL GIVE THE ENGINEER THE RIGHT TO EITHER REJECT THE SUBMITTAL OR SELECT THE ITEM OF HIS CHOICE AT NO ADDITIONAL COST TO THE OWNER.

THE ENGINEER RESERVES THE RIGHT TO TAKE UP TO TWENTY (20) WORKING DAYS FOR ACTION ON ANY GIVEN SHOP DRAWING. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR TIMELY SUBMISSION OF SHOP DRAWINGS BASED ON THE ABOVE AND NO EXTRA FOR TIME OR COSTS WILL BE ACCEPTABLE.

After approval, the Engineer will make the following distribution: one (1) set to the Owner, one (1) set to Engineer's central files, one (1) set to the Engineer's Resident Project Representative, and one (1) digital set to the Contractor. The

Contractor shall keep one (1) hard copy of the approved shop drawing at the project site and shall be responsible for providing the document to suppliers and/or manufacturers.

9. Initial Videos, Pictures and Progress Pictures

Before beginning the job, the Contractor shall make videos and pictures showing the status before any construction has begun. The videos and pictures shall be made, submitted and approved prior to the beginning of work. The Contractor shall submit the videos and pictures in an electronic format suitable to the Engineer.

The Contractor shall furnish digital progress pictures to the Engineer at the end of each month at the time the partial pay estimate is submitted. Pictures shall be of highest quality clearly showing the work and preferably not showing workmen or passersby. The name of the project, the item or scene pictured, Contractor's name, and the date shall be incorporated into the file name for each picture. Five (5) pictures shall be required with each partial pay estimate. Each electronic file should be date and time stamped. REQUESTS BY THE CONTRACTOR FOR PARTIAL PAYMENTS WILL NOT BE CONSIDERED WITHOUT THE REQUIRED PROGRESS PICTURES.

After construction and clean-up are completed, the Contractor shall submit video and pictures showing the cleaned up work and all of the progress pictures for the project in an electronic format suitable to the Engineer.

10. Progress Schedule and Progress Meetings

The Contractor shall furnish one (1) copy of a suitable progress chart or schedule in graphical form showing the estimated schedule for the project as required in **Article 2 and Article 6** of the General Conditions. After approval, the Contractor shall update the chart monthly showing the actual progress on the project for each specific item of work in relation to the estimated schedule.

FAILURE TO SUBMIT SAID PROGRESS SCHEDULE AND KEEP IT CURRENT MONTHLY SHALL BE GROUNDS FOR NONPAYMENT OF PARTIAL PAYMENT REQUESTS.

The Engineer and Owner may elect to conduct monthly progress meetings on-site with the Contractor, the Owner and the Engineer to discuss progress, any problems encountered and other appropriate subjects.

11. Utilities Required by Contractor

All electric current and/or any utility service required by the Contractor shall be furnished at his own expense.

12. Project Sign

A project sign is required as depicted at the end of Section 1.

13. Field Office and Supervision

A field office is not required. The Contractor shall maintain Record Documents on-site and readily available. The Contractor shall provide a responsible field superintendent at the project site at all times that work is being performed who can be contacted during work hours by cell phone.

14. Existing Utilities

The following are existing utilities in the area:

TV Cable	DTC Communications
Water Lines.....	City of Smithville, Tennessee
Power Lines	Smithville Electric Systems
Gas Lines	Middle Tennessee Utility District
Sewer Lines	City of Smithville, Tennessee
Buried and Overhead Telephone / Internet.....	DTC Communications / Verizon

Special precautions shall be taken by the Contractor to avoid damage to existing overhead and underground utilities owned and operated by the Owner or by public or private utility companies.

Before proceeding with the work under this Contract, the Contractor shall confer with all public or private utilities in the vicinity of the construction work and call Tennessee One-Call at 811. The purpose of the conference or conferences shall be to notify said companies, agencies or departments of the proposed construction schedule, verify the location of, and possible interference with, the existing utilities and arrange for necessary suspension of service where possible and approved by the utility. The Contractor shall bear the entire responsibility for locating and avoiding or repairing damage to said existing utilities. **NO WORK SHALL PROCEED WITHOUT ALL UNDERGROUND UTILITIES BEING LOCATED AND MARKED.**

The Contractor shall locate all unknown metallic hazards, namely buried pipe, metals, etc., by using a pipe locator or whatever better methods the Contractor may elect to use. The pipe locator should immediately precede the trench ditching and all hazards located and marked with a pointed stake in such manner as to notify the ditch operator of such hazard.

Where existing utilities or other underground structures are encountered, they shall not be displaced or molested unless necessary and approved by the Owner of the facility, and in such case they shall be replaced in as good or better

condition than found as quickly as practical. ALL SUCH UTILITIES THAT ARE DAMAGED OR MOLESTED SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, UNLESS IN THE OPINION OF THE ENGINEER SUCH DAMAGE WAS CAUSED THROUGH NO FAULT OF THE CONTRACTOR.

It is expected that the Contractor will be diligent in his efforts and use every possible means to locate existing utilities. Any claims for unavoidable damage, based on improper or unknown locations, will be thoroughly examined in light of the Contractor's efforts to locate the said utilities or obstructions prior to beginning construction.

15. Permits, Codes, Agreements and/or Contracts with Private Utilities

The Contractor shall make application for, obtain, and pay for all licenses, permits, agreements, bond fees and/or contracts with private utility companies and shall pay all fees and charges in connection therewith at no cost to the Owner.

16. Protection of Roadways On and Off-Site

In the hauling of materials and/or equipment to and from the site of the work, the Contractor shall take care to protect county roads, highways, parking areas and/or city streets. The Contractor shall be responsible for repair of highways, roads, parking areas or streets damaged by his operations (or operations of his subcontractors) and shall repair said damage to the original condition. If repair to the original condition is not practical or possible, the Contractor shall be responsible for obtaining proper release from the owner of the damaged roadway.

17. Lands, Rights-of-Way and Limits of Work (see **Article 4** of the General Conditions)

a. Lands and Easements

In general, the work will be constructed on existing easements held by the Owner or on street rights-of-way.

The Contractor shall be responsible for obtaining necessary work permits from the City of Smithville or DeKalb County.

b. Limits of Work

The Contractor shall limit his work area and storage to the Owner's property and/or permanent utility easements. The Contractor shall not encroach or dump excess or waste materials on property adjacent to the work sites unless **written** permission is first received from the affected property owner and a copy is submitted to the Engineer. **Where excess**

materials are to be dumped off-site, the Contractor shall furnish the Owner written evidence of the property owner's permission.

In connection with work performed on easements or adjacent to private property, the Contractor shall take all reasonable care to avoid damage to the property owners' buildings, grounds and facilities and shall be completely responsible for the repair of damage to same. It is intended that when construction is complete, the easements and the private property owner's facilities and grounds shall be restored to as good as or better than the original condition as possible.

Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

18. Undesirable Workmen

The Engineer reserves the right, but in so doing does not assume responsibility to make a judgment (the primary responsibility rests upon the Contractor), to remove inept or uncooperative servicemen as "Undesirable Workmen".

19. Work Hours

Except as otherwise required for the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours and Contractor will not permit overtime work or the performance of work on Saturday, Sunday or any legal holiday without Owner's written consent given after prior written notice to Engineer.

20. Materials or Equipment to be Furnished (see Paragraph 6.7 of the General Conditions

Where the specifications state "or equal" followed by a brand name or model, a standard of quality is being set. The naming of a brand or model is a matter of convenience to avoid writing a volume. Other brands or equipment under this category may be submitted at the shop drawing stage of construction. The Engineer will consider other products on the basis of materials of construction, weight, function, size (it must fit the space provided), service history and electrical and mechanical characteristics.

Where the specifications state one or more model numbers and manufacturers followed by the words "or approved equal" the meaning is that the product(s)

specified is acceptable and that, while there may be other products that are acceptable, the only way to be assured that another product will be acceptable is to submit the desired substitution during the BID PROCESS and receive an affirmative answer in the form of a letter or an addendum. The Engineer will consider the factors previously described in making the determination.

Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. The Engineer shall have the right to require the use of such specifically designated material, article, or process. The Engineer, where practical, may require submission of actual samples of materials or products.

21. Occupational Safety and Health Act

The Contractor's attention is called to **Paragraph 6.20** of the General Conditions.

22. Noise and Odor Control

The work hereunder is to be performed within rural and urban areas of Smithville. The Contractor shall be responsible for noise and odor abatement procedures and shall not commence work before 7:00 a.m. local prevailing time.

23. Chemical Requirements

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classifications, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

24. Confined Spaces

During the construction of the facilities to be built under the terms of this contract, it may be necessary for the OWNER'S or the ENGINEER'S representative(s) to enter "confined space(s)", as defined by OSHA Regulations, in order to observe the work of the Contractor and/or in order to determine compliance with the terms of the contract. The Contractor shall provide the proper "Permit", the "Attendant", and/or the "Entry-Supervisor", the testing safety and emergency equipment and all other means of compliance with OSHA regulations. The OWNER or the ENGINEER will provide general training to their respective proposed "authorized Entrant(s)" who are employees of the OWNER or the ENGINEER, however the Contractor shall provide any specialized training required for the equipment furnished, the Contractor's Permit System or any other condition special to the work to be performed. The Contractor shall submit a copy of its written Permit System prior to the commencement of construction and shall be fully responsible for compliance with the appropriate regulations.

25. Lines and Grades

The Engineer has established survey baselines for the work. Benchmarks were set at the time of the original survey, the locations and elevations of which are shown on the Plans. These benchmark elevations were checked and verified at the time of the original survey.

Where tie-ons to existing lines or structures are to be made, the actual inverts of the existing lines or elevations of existing structures shall be field checked for verification before construction begins.

Any apparent discrepancy or error discovered in these benchmark elevations shall be reported to the Engineer immediately at telephone number 615-883-3243. Written approval from the Engineer shall be obtained before any changes are made.

26. Restoration of Disturbed Areas/Work on or Adjacent to Private Property

In connection with work performed on or adjacent to private property, the Contractor(s) shall take all reasonable care to avoid damage to the property owners' buildings, grounds and facilities and shall be completely responsible for the repair of damage to same. Fences, hedges, shrubs, etc., within the construction limits shall be carefully removed, preserved and replaced when the construction is completed. Grassed areas shall be graded, fertilized, and seeded when construction is completed in accordance with the requirements set out in Section 4 of these Detailed Specifications. It is intended that when construction is completed the private property owner's facilities and grounds shall be restored to as near their original condition as possible.

Foundations adjacent to an excavation which is to be carried below the bottom of the foundation shall be supported by shoring, bracing, or underpinning, and the Contractor(s) shall be held strictly responsible for any damage to said foundation.

Work on the rights-of-way of the Tennessee Department of Transportation and/or the City Street Department and/or the County Road Department shall be considered work on Private Property. It shall be the Contractor's responsibility to obtain any necessary work permits.

27. Reference to Tennessee Department of Transportation Specifications and Standard Roadway and Structure Drawings

Where items are referred as being in conformance with Tennessee Department of Transportation Specifications and/or Standard Drawings, certain materials, equipment and construction methods required under this Section of the Detailed Specifications for Road and Bridge Construction and subsequent special

provisions and revisions issued by the Tennessee Department of Transportation; and the Standard Roadway and Structure Drawings (current revision) adopted by the Tennessee Department of Transportation (TDOT), Bureau of Highways, on January 1, 2021 as amended and/or modified herein.

28. References to Standard General Conditions of the Construction Contract

Where references are provided within this Project Manual to the Standard General Conditions of the Construction Contract, they are provided for the benefit of the Contractor. Where conditions may be repeated or expanded in this Section, they shall be in addition to those requirements stated in the Standard General Conditions of the Construction Contract. Where any conflicts may exist with the Standard General Conditions of the Construction Contract and text found elsewhere in the Project Manual, the Standard General Conditions of the Construction Contract shall prevail.

29. Applicability of Governing Standards

The latest version of any standard listed in these Detailed Specifications as of the bid date shall apply. In cases that an incorrect revision year is listed, it shall not apply - the latest version as of the bid date shall apply.

30. Connecting to Existing Lines

The Contractor shall make the required connections to existing sewer lines as specified in these Detailed Specifications. The work of connecting new lines to existing lines is the responsibility of the Contractor and is NOT a separate pay item unless indicated otherwise in the BID FORM; it being the intent of these Detailed Specifications to provide a complete operable facility.

31. Water and Uplift

The Contractor(s) shall, by the use of well points, pumps or other approved methods, prevent the accumulation of water in excavated areas. Should water accumulate, it shall be promptly removed. The Contractor(s) shall also provide for dewatering areas adjacent to structures or lines to prevent uplift during construction operations. The Contractor(s) will be held responsible for any damage due to uplift of such structures or lines and to existing structures during construction operations.

32. Subsurface Conditions/Site Conditions

As provided by **Article 4** of the General Conditions, subsurface conditions are unknown unless a Geotechnical Report is included at the end of Section 1.

Neither the Owner nor the Engineer is responsible for subsurface conditions. By executing the Agreement form in the Contract Documents, the Contractor affirms that he/she has made his/her own determination concerning subsurface conditions.

33. Blasting

Blasting will not be allowed on this project.

34. Flooding

Some of the work is to be conducted near or will cross ditches and drainage canals which may flood. Obstructions to flow which would cause flooding in the event of heavy rainfall shall be avoided by the Contractor.

35. Temporary Project Water Pollution Control (Soil Erosion)

Temporary pollution control provisions shall be taken to avoid damage to embankments and cut slopes and to avoid transport of sediment to adjacent property owners and/or streams.

Pollution and erosion control methods shall include but are not limited to the following:

a. Temporary Berms

Temporary berms shall be constructed of compacted soil with or without a shallow ditch at the top of all excavation and embankment slopes to prevent excessive erosion until the slopes are stabilized.

b. Temporary Slope Drains

Temporary slope drains shall be stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, sod or other material acceptable to the Engineer that may be used to carry water down slopes to reduce erosion.

c. Temporary Silt Fences

Temporary silt fences with baled hay or straw shall be placed on the natural ground, at the bottom of fill slopes, in ditches or other areas where siltation is a problem or where shown on the Plans.

Silt fences are constructed of wire mesh fence with a covering of filter cloth composed of burlap, plastic filter fabric or some other suitable material on the upper grade side of the fence and anchored into the soil.

Bales shall be either hay or straw containing five (5) cubic feet or more of material.

The above listed pollution and erosion control methods shall be used at the discretion of the Contractor or where directed by the Engineer. Temporary pollution control is NOT a separate pay item.

The Contractor shall be solely and strictly liable for any violations of State or Federal water pollution laws, regulations, or standards caused during construction by the Contractor's forces or subcontractors and shall pay any penalties levied by any party due to said violations.

The Contractor shall maintain all areas where excavation and backfill construction operations are being performed or have been performed in order that siltation, erosion and other forms of stormwater pollution caused by construction activities will be kept to a minimum during construction.

36. Substantial Completion/Delays in Final Completion (see Paragraphs 14.8 and 14.9 of the General Conditions)

The project will be considered substantially complete for the purposes of this contract when it is placed in operation. Unnecessary delays in either final completion or repair of "punch list" items will result in assessment of the Owner's cost against the Contractor's retainage.

In order to allow all outstanding incomplete items other than those mentioned above to be completed during the initial start-up and operating period, A SEMI-FINAL INSPECTION WILL BE MADE UPON REQUEST BY THE CONTRACTOR AFTER THE BEGINNING OF THE INITIAL START-UP PERIOD. In no event will the date of substantial completion of the Contract for purposes of determining payment of the liquidated damages be set before the beginning of the initial start-up period. The date of substantial completion will be established by the Engineer based on full and continuous operation of the facilities.

37. Final Clean-Up

Before the work is considered as complete, all rubbish and unused material due to or connected with the construction shall be removed and the premises left in a condition satisfactory to the Engineer. Streets, curbs, crosswalks, pavements, sidewalks, fences and other public and private property disturbed or damaged shall be restored to their former condition at the Contractor's expense. Final acceptance will be withheld until such work is completed.

Storm Water Pollution Prevention Plan

(to be inserted when approved)

**Aquatic Resource
Alteration Permit**

(to be inserted when approved)

TDOT Utility Permit



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

REGION 2 RIGHT OF WAY
7512 VOLKSWAGEN DRIVE
CHATTANOOGA, TN 37416
(423) 892-3430

BUTCH ELEY
DEPUTY GOVERNOR &
COMMISSIONER OF TRANSPORTATION

BILL LEE
GOVERNOR

Authorization Date: JANUARY 18, 2024

Hunter Hendrixson
Smithville, City of
104 E. Main Street
Smithville, TN 37166

Excavation of pavement – see conditions

PERMIT NO.: UO-2007072519-2023 2023-710

BOND: \$50,000.00

DESCRIPTION: Excavation of a 10' diameter to replace manhole. Excavation will extend into roadway.

Route	Begin LM	Ending LM	County	Start Long/Lat	End Long/Lat
26	17.01	17.01	DeKalb	-85.839541, 35.960581	-85.839629, 35.960444

Dear Hunter Hendrixson:

Enclosed is an approved drawing covering the installation of the above referenced facilities. This permit was approved **01/18/2024**. The performance of this work will be covered under terms of the enclosed permit or general agreement between the utility and the Department of Transportation and the attached Permit Notes.

Please make sure your work forces have a copy of this approved drawing on hand at all times while working on the state rights-of-way. The attached notes are approval conditions to this permit and drawings.

In accordance with the State's Rules and Regulations, the Utility shall provide appropriate signing at all times during the construction and maintenance of facilities; therefore, signs must be in place before construction begins.

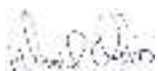
Please notify the District Utility Inspector at least three working days prior to the proposed date to begin work, of the date construction will begin in order to determine if a preconstruction conference is needed and to arrange proper inspection.

DISTRICT UTILITY CONTACT:

Name: Rick Norrod
Address: 491 Ferrell Drive Cookeville TN 38506-4247
Phone: (931) 520-2455
Fax: (931) 528-2242
Cell: (931) 200-8851

The Utility must notify the District Utility Inspector upon completion of the installation in order that a final inspection can be made to facilitate the release of the bond. This permit expires one year from date of issuance.

Regards,

A handwritten signature in dark ink, appearing to read "D. Oliver", is positioned below the closing salutation.

Daniel K. Oliver, Assistant Chief Engineer, Region 2 Director
Administrative Building
7512 Volkswagen Drive
Chattanooga, TN 37416

Enclosure:

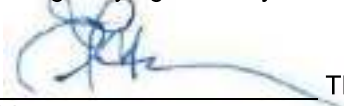
CC: Rick Norrod

Conditions:

- 1 Note: The permit proprietor will be responsible for the repair of any damage to the roadway or TDOT appurtenances caused by utility construction.
Comments: **All situations which require the open cutting of the route will require full lane pavement repairs. Patches are not allowed. One-half of the traveled portion of the pavement must remain open to traffic at all times. Existing pavements, buses, curbs and gutters, and sidewalks shall be cut and brought to a neat line by mechanically sawing or by use of an air hammer. Expansion joints removed shall be replaced. All sidewalk repairs shall meet current Public Rights-of-Way Accessibility Guidelines and all Federal ADA regulations.**

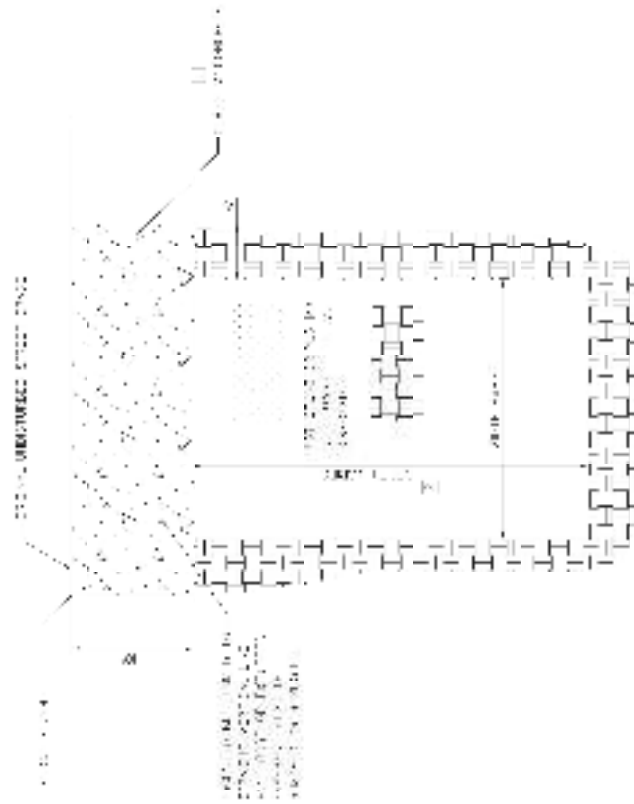
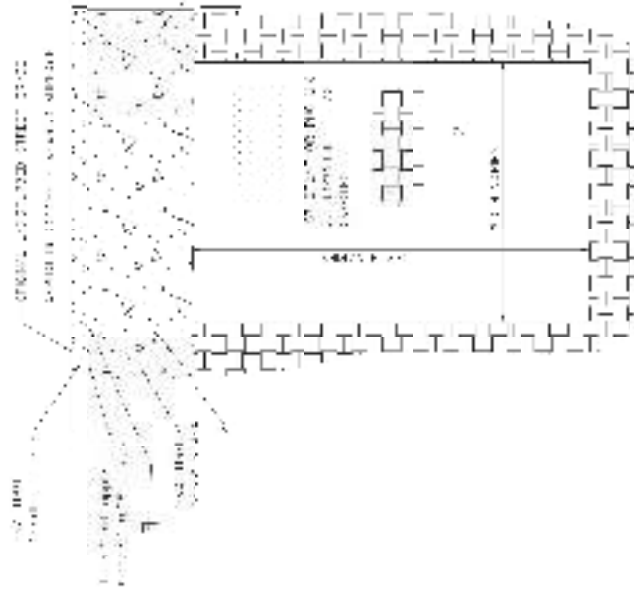
The repair will consist of backfilling the repair pit with flowable fill to a point level with the bottom of the existing pavement. The flowable fill must be protected with a steel plate for a minimum of 12 -24 hours for the fill to cure, then repave a full lane width extending 25 feet on each side of the excavation limits (minimum 50'). Pavement design must match existing pavement. Use steel plates if needed. Plates must be stabilized by staking and bordered with tapered asphalt. See attached repair detail(s).

If permanent pavement restoration cannot be accomplished due to temperatures and cold mix must be used, utility shall maintain temporary repair until restoration with hot mix asphalt in the Springtime when temperatures allow.
- 2 Note: The Permit Proprietor is to ensure that all Parties associated with this project complies with all "Rules and Regulations for Accommodating Utilities within Highway Rights-of-Ways."
Comments:
- 3 Note: All installations and repairs are to be installed in compliance to TDOT'S "Rules and Regulations for Accommodating Utilities within Highway Rights-of Ways".
Comments:
- 4 **Note: The Permit Proprietor is responsible for all erosion and sediment control required for the Utility installation**
Comments: Utility is required to obtain clearances and permits from all other applicable agencies and must have Notice of Coverage from TDEC before work begins.
- 5 **Note: The T.D.O.T. inspector must be notified at least three (3) days before the commencement of the work to arrange proper inspection to ensure a valid permit.**
Comments: Utility must submit traffic control plans and a lane closure request 15 days prior to commencement of work for review and scheduling. Work hours are from 9 am – 2 pm, Monday – Friday.
- 6 Note: T.D.O.T. approved drawings and permit must be present at the job site while work is in progress.
Comments:
- 7 **Tennessee811. Dial 811 for Utility locates**
Comments:

- 8 Note: Flaggers and workers in work zones shall wear Safety apparel meeting the requirements of ISEA “American National Standard for High Visibility Apparel” Refer to the latest edition of the “MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.” (MUTCD), Section 6E.02
Comments:
- 9 Note: Delineator cones or barrels required along with the proper signage to close shoulders or lanes for Work-Zones or Buffer-Zones according to the latest edition of the “MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.” (MUTCD)
Comments:
- 10 Note: Signing and Traffic Control Must be in conformance with the latest edition of the “MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.” (MUTCD)
Comments:
- 11 Note: Machinery, materials and workers are not to be located in the roadway, shoulders or in the clear-zones without proper traffic control measures in compliance with the MUTCD requirements. D)
Comments:
- 12 Note: Stay Out Of Wetlands without Notice of Coverage permit by TDEC.
Comments: Apply erosion control as construction progresses. Inspect all erosion control periodically, after rainstorms check for rill erosion, dislocation or failure. Where erosion is observed, apply additional erosion control measures. If washout occurs, repair the slope grade, reseed and reinstall mulch or seed and straw. Continue inspecting until vegetation has firmly established.**
- 13 Note: All logs, stumps, and other construction related debris must be removed from the Right-of-Ways.
Comments:
- 14 Note: All installations on State Routes shall meet or exceed the minimum AASHTO requirements.
Comments:
- 15 Note: Applicant is responsible for identifying, surveying, and staking the State highway right-of-way boundary in the above-described work area, and for maintaining said staking for the duration of the installation of Applicant’s facilities. Applicant is responsible for acquiring all utility rights-of-way or easements outside the State highway right-of-way as may be needed to perform the installation and maintenance of its facilities, and is responsible for any damages caused by trespass or installation or maintenance of facilities outside the State highway right-of-way.
Comments
- 16 APPROVED AS NOTED BY:  TDOT REGION 2 UTILITY DEPARTMENT DATE: 1/18/2024
Comments:
- 17 Note: Prior to commencing work under this agreement, the Utility shall have adequate and appropriate general liability insurance providing liability coverage in an amount not less than \$1,000,000 dollars per occurrence and \$300,000 per claimant.
Comments:



DATE	BY	CHKD BY
11/15/11	J. M. [unclear]	[unclear]



1. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

2. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

3. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

4. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

5. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

6. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

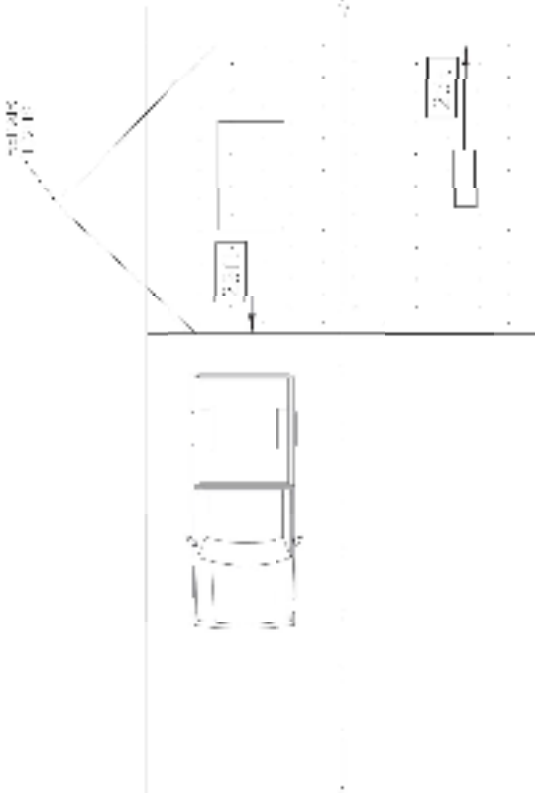
7. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

8. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

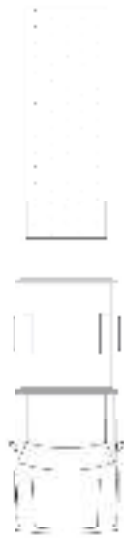
9. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

10. ALL CONCRETE SHALL BE PLACED AND FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH. THE SURFACE SHALL BE FINISHED TO THE PROPER GRADE AND FINISH.

DATE	BY	CHKD BY	APP'D BY



WHEEL PATH



REPAIR DETAIL

Notes:

1. CONCRETE SHALL BE PLACED TO MATCH EXISTING SURFACE FINISH.
2. REBAR SHALL BE PLACED AS SHOWN.
3. CONCRETE SHALL BE CURED AS SHOWN.
4. REBAR SHALL BE PLACED AS SHOWN.
5. CONCRETE SHALL BE PLACED TO MATCH EXISTING SURFACE FINISH.
6. REBAR SHALL BE PLACED AS SHOWN.
7. CONCRETE SHALL BE CURED AS SHOWN.
8. REBAR SHALL BE PLACED AS SHOWN.
9. CONCRETE SHALL BE PLACED TO MATCH EXISTING SURFACE FINISH.
10. REBAR SHALL BE PLACED AS SHOWN.
11. CONCRETE SHALL BE CURED AS SHOWN.
12. REBAR SHALL BE PLACED AS SHOWN.
13. CONCRETE SHALL BE PLACED TO MATCH EXISTING SURFACE FINISH.
14. REBAR SHALL BE PLACED AS SHOWN.
15. CONCRETE SHALL BE CURED AS SHOWN.
16. REBAR SHALL BE PLACED AS SHOWN.
17. CONCRETE SHALL BE PLACED TO MATCH EXISTING SURFACE FINISH.
18. REBAR SHALL BE PLACED AS SHOWN.
19. CONCRETE SHALL BE CURED AS SHOWN.
20. REBAR SHALL BE PLACED AS SHOWN.

DATE: 10/15/2014

BY: [Name]

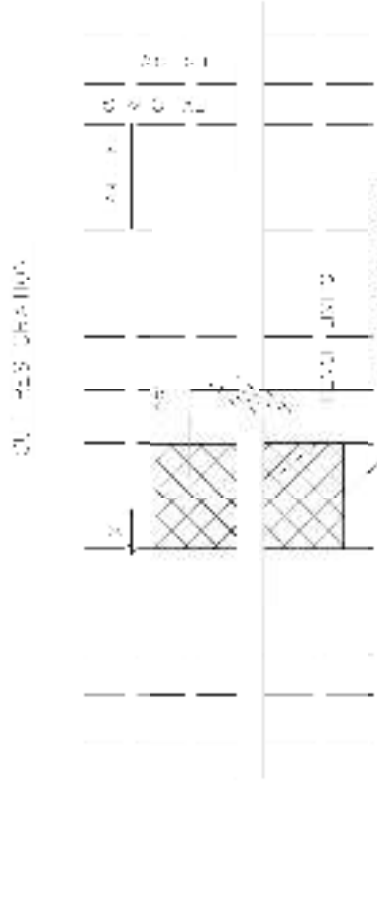
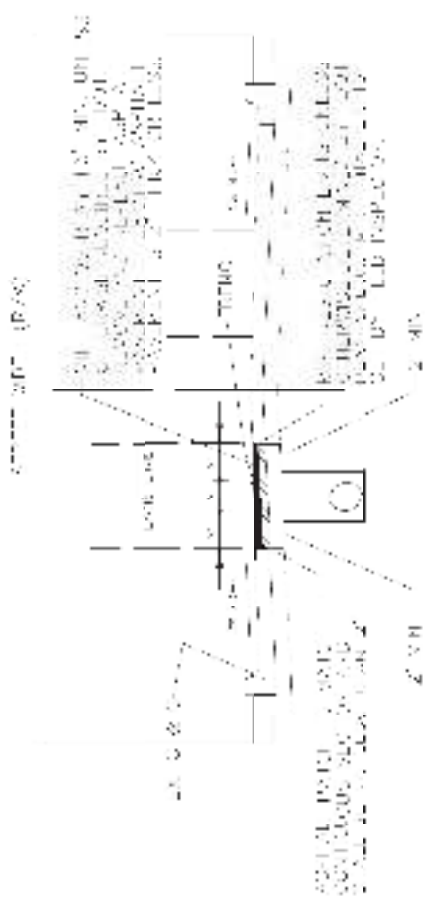
CHKD BY: [Name]

APP'D BY: [Name]



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
WHEEL PATH
PAVEMENT
REPAIR DETAIL

DATE	BY	CHK'D	APP'D



NOTE: ALL DIMENSIONS ARE IN FEET AND INCHES. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.

FIGURE 10-10

NOTES:

1. TRENCH SHALL BE 2'-0" DEEP AND 2'-0" WIDE.
2. TRENCH SHALL BE FILLED WITH CONCRETE TO FINISH SURFACE.
3. CONCRETE SHALL BE PLACED IN 6" LIFTS.
4. CURB SHALL BE 2'-0" WIDE AND 2'-0" HIGH.
5. CURB SHALL BE CAST WITH TRENCH.
6. CURB SHALL BE FINISHED TO MATCH ADJACENT SURFACE.
7. CURB SHALL BE REINFORCED WITH #4 BARS AT 18" ON CENTER.
8. CURB SHALL BE FINISHED TO MATCH ADJACENT SURFACE.

NOT TO SCALE



Application and Utility Use and Occupancy Agreement

Agreement No.	_____
State Route No.	_____
Project No.	_____
County	_____
Type of Surety	_____
Bond / Check No.	_____

Application is hereby made by Name: _____ City of Smithville _____ ("Applicant")
 Address: 104 E. Main St. Smithville, Tennessee 37166

for permission to install and maintain the following described utility facilities on the right-of-way of State Highway No. 26 in Dekalb County, Tennessee, Description: Installation of gravity sewer line and manholes along State Highway 26 right of way and removal of existing appurtenances.

At the following described location: Within the right-of-way of State Highway 26 in Smithville, TN at the following:

GPS = Start N 35.960628° W -85.839614°, End N 35.960550° W -85.839499°

Log Mile = Start N/A End N/A

in accordance with the attached plans and subject to *RULES AND REGULATIONS FOR ACCOMMODATING UTILITIES WITHIN HIGHWAY RIGHTS-OF-WAY* hereto issued by the Tennessee Department of Transportation ("TDOT"), and made a part hereof by reference thereto, and particularly to those provisions shown on this agreement and any special provisions set forth herein.

Special Provisions: _____

A) Applicant is to deliver a **bond**, in a form acceptable to TDOT, in the sum of \$ _____ to guarantee installation of facilities consistent with provisions of this Agreement and maintenance of the State highway right-of-way for a period of _____ months after acceptance of the condition of the State highway right-of-way by an authorized representative of TDOT.

OR

B) An active, fully executed **General Agreement** is in effect for Applicant, dated: _____

This agreement is to be strictly construed and no work other than that specifically described above is authorized.

The applicant, in applying for this agreement, agrees to the following:

1. Applicant shall design, install and maintain its facilities in accordance with *RULES AND REGULATIONS FOR ACCOMMODATING UTILITIES WITHIN HIGHWAY RIGHTS-OF-WAY* hereto issued by TDOT.
2. Applicant, before commencing any work or installing any facilities, shall submit plans to TDOT's regional utility office showing the location, type, and scope of all work to be done or appliances to be installed in order that the Regional Utilities Coordinator may recommend approval of the proposed work.
3. Applicant is responsible for any damages caused by any negligence on its part, including but not limited to the improper placing of or failure to display construction signs, danger signs, and other required signing, and shall bear any expense proximately caused by its operation on the State highway right-of-way.
4. Applicant is responsible for identifying, surveying, and staking the State highway right-of-way boundary in the above-described work area, and for maintaining said staking for the duration of the installation of Applicant's facilities.
5. Applicant is responsible for acquiring all utility rights-of-way or easements outside the State highway right-of-way as may be needed to perform the installation and maintenance of its facilities, and is responsible for any damages caused by trespass or installation or maintenance of facilities outside the State highway right-of-way.
6. Applicant shall pay the salary and expenses of any inspector(s) that TDOT may see fit to place upon the work while such inspector(s) is/are assigned to this work. TDOT, before incurring any expenses expected to be charged to the Applicant, shall advise the Applicant in writing of this fact.
7. Applicant shall replace or repair any portion of the pavement, shoulders, bridges, private driveways or any part of said highway which may be disturbed or damaged. Replacements and repairs shall be made in accordance with the TDOT *Standard Specifications for Road and Bridge Construction* and any additional instructions which may be issued by TDOT. Applicant agrees that TDOT may accomplish further replacements or repairs if those made

Applicant understands and agrees that it shall be subject to any or all of the following remedies in accordance with T.C.A. § 54-5-854:

- a. TDOT's contractor may undertake the highway construction project without liability to the Applicant for damages to the Applicant's facilities;
- b. The Applicant shall be liable to TDOT's contractor for damages resulting from the failure, including without limitation the contractor's delay damages; and
- c. The Applicant shall be liable for any civil penalty assessed by TDOT for each calendar day the Applicant fails to complete the relocation of its facilities within the required schedule.

Neither the actions of TDOT nor those of its contractor after the Applicant's failure to remove and relocate its facilities in accordance with the required schedule shall constitute a waiver of any of these statutory remedies.

9. Applicant shall be responsible for any conflicts with other utilities or appurtenances that are on the highway right-of-way and shall notify the respective owner(s) of any conflicts and secure the owners permission for any alterations.
10. Applicant hereby indemnifies and holds harmless TDOT, its employees, officers and agents, from and against any and all claims, liabilities, losses, and causes of action which may arise, accrue, or result to any person, firm, corporation, or other entity which may be injured or damaged as a result of acts, omissions, or negligence on the part of the Applicant, its employees, its contractors, or any person acting for or on its or their behalf in the performance any activities relating to this Agreement. Applicant shall be liable for the reasonable cost of attorneys for TDOT in the event such services are necessitated to enforce the terms of this Agreement or otherwise enforce the obligations of the Applicant to TDOT.
In the event of any such suit or claim, the Applicant shall give TDOT immediate notice thereof and shall provide all assistance required by TDOT in TDOT's defense. TDOT shall give the Applicant written notice of any such claim or suit, and the Applicant shall have full right and obligation to conduct its own defense thereof. Nothing contained herein shall be deemed to accord to the Applicant, through its attorney(s), the right to represent TDOT in any legal matter, such rights being governed by Tennessee Code Annotated, Section 8-6-106.
11. TDOT does not grant the Applicant any right, title or claim on any State highway right-of-way, and in granting this permission to go upon the State highway right-of-way, TDOT does not in any way assume the maintenance of the Applicant's facility.
12. Applicant may be required by law to obtain one or more environmental permits prior to installing its facilities. Determining which permits are necessary and obtaining those permits are the sole responsibility of the Applicant. Contact information for the regulatory agencies is available from TDOT upon request. The activities of the Applicant in installing its facilities pursuant to this Agreement are not covered under any permit associated with TDOT construction activities.
13. Applicant agrees that if the total area of disturbed land associated with the installation of its facilities is planned to exceed, or does at any time actually exceed, one (1) acre, Applicant shall obtain coverage under a *National Pollutant Discharge Elimination System General Permit For Discharges Of Stormwater Associated With Construction Activities*.
14. Applicant agrees that during all phases of work permitted herein, it shall implement and maintain appropriate Erosion Prevention and Sediment Control measures, as described in the *TDOT Standard Specifications for Road and Bridge Construction* and/or the Tennessee Department of Environment and Conservation *Erosion and Sediment Control Handbook*.
15. The Utility agrees that it shall comply with all State and Federal laws, rules, regulations, and permit terms and conditions applicable to the installation and maintenance of the Applicant's facilities.
16. This agreement shall become void if work is not commenced within a year from the date of execution of this Agreement.

Applicant

State of Tennessee Department of
Transportation

By: Wanda Henderson 12/1/23
Signature Date
City Administrator _____
Title

By: _____
Regional Utility Coordinator Date
By: _____
Regional Engineering Director Date

November 27, 2023

Stephanie Allen
Region 2 Project Development
Stephanie.Allen@tn.gov
7512 Volkswagen Drive, TN
Chattanooga, Tennessee 37416

RE: TDOT Use & Occupancy Agreement
State Hwy. 56 & 26
Sewer System Improvements
Smithville, Tennessee
Wauford Project No. 2090; Contract 23-01

To Whom It May Concern:

The subject project will consist of three encroachments on TDOT right-of-way. Installation of a 10-inch diameter gravity sewer line and manhole within TDOT right-of-way along State Hwy. 56/ South Congress Boulevard in Dekalb County. Additionally, two 8-inch gravity sewer lines and two manholes will be replaced along State Hwy. 26/West Broad Street. Line work in this project will not be done inside of the roadway. The purpose of this sewer line is to replace faulty lines and manholes in service. The three project locations are at the following coordinates: Latitude: 35.950457° Longitude: -85.813489°, Latitude: 35.960566° Longitude: -85.839517°, Latitude: 35.958472° Longitude: -85.830776°. Included with this application is the signed Environmental Agreement Form, Pipeline Encroachment Form, and the Project Plans.

Please send an electronic copy of the approved permit to the email addresses listed hereinafter for distribution to the contractor and any relevant personnel to keep on-site during construction. Should you need additional information or have any questions, please do not hesitate to contact Aaron Garner at 615-883-3243.

Sincerely,



Hunter Hendrixson
City Administrator
hunterh75@yahoo.com

Enclosure

cc: Daniel Tribble, P.E., Wauford daniel@jrwauford.com
Aaron Garner, E.I., Wauford aaron@jrwauford.com



Pipeline Encroachments

The following information is required to accompany all plans for pipeline encroachments.

	Carrier Pipe	Casing Pipe
1. Contents to be handled	<u>Sewage</u>	<u>N/A</u>
2. Outside Diameter	<u>9.05 inches</u>	<u>N/A</u>
3. Pipe material	<u>DIP</u>	<u>N/A</u>
4. Pipe Specification and grade	<u>A21.51 Class 350</u>	<u>N/A</u>
5. Wall thickness	<u>0.25 inches</u>	<u>N/A</u>
6. Design Pressure	<u>N/A</u>	<u>N/A</u>
7. Actual Working Pressure	<u>N/A</u>	<u>N/A</u>
8. Type of joint	<u>Restrained Joint Ductile Iron Pipe</u>	<u>N/A</u>
9. Coating	<u>N/A</u>	<u>N/A</u>
10. Method of installation	<u>Open-Cut</u>	<u>N/A</u>
11. Protection at end of casing	<u>N/A</u>	<u>N/A</u>
	Both Ends _____ One end _____ Type _____	
12. Cover: Finished grade to top of casing or carrier	<u>N/A</u>	
	Bottom of ditch or toe of slope to top of carrier to casing	<u>N/A</u>
13. Cathodic protection	<u>N/A</u>	
14. Size and height of casing vent	<u>N/A</u>	
15. Distance from casing vent to edge of nearest traffic lane	<u>N/A</u>	



Environmental Agreement for Utility Projects

I, the undersigned representative of the Utility named below, state the following:

1. The Utility desires to construct the project described below (the named project).
2. The Utility is aware that it may be required by law to obtain one or more environmental permits prior to constructing the named project; that determining which permits are necessary and obtaining those permits are the sole responsibility of the Utility; and that the activities of the Utility in constructing the named project are not covered under any permit associated with TDOT construction activities.
3. The Utility agrees that if the total area of disturbed land associated with the construction of the named project is planned to, or does at any time actually exceed one (1) acre, the Utility shall obtain coverage under the *National Pollutant Discharge Elimination System General Permit For Discharges Of Stormwater Associated With Construction Activities*.
4. The Utility agrees that during all phases of construction of the named project, the Utility shall implement and maintain appropriate Erosion Prevention and Sediment Control (EPSC) measures, as published in the *TDOT Standards and Specifications* and/or the Tennessee Department of Environment and Conservation (TDEC) *Erosion and Sediment Control Handbook*.
5. The Utility agrees that it shall comply with all State and Federal laws, rules, regulations and permit terms and conditions applicable to the construction of the named project.

Utility Name: City of Smithville

Utility Address: 104 E. Main St. Smithville, Tennessee 37166

Utility Phone: 615-597-4745 Fax: _____

Project Description: : Replacing gravity sewer line and manholes on the west side of State Highway 56/South Congress Boulevard and the southwest side of State Highway 26/West Broad Street in TDOT right of way.

Representative Name: Hunter Hendrixson, City Administrator

Hunter Hendrixson

(SIGNATURE)

12/1/23

(DATE)

Notice to Utilities

When a utility performs work along the highway rights-of-way, either by a State utility permit or due to a construction project, the utility shall be subject to and must comply with ALL of the following:

1. Section 404 of the Federal Clean Water Act (33 U.S.C. 1344) as defined in 33 CFR, Part 323, latest edition, which can currently be found on pages 2079-2080 of the Federal Register dated January 15, 2002.

(U.S. Army Corps of Engineers Nationwide Permit Number 12 (Utility Line Activities))

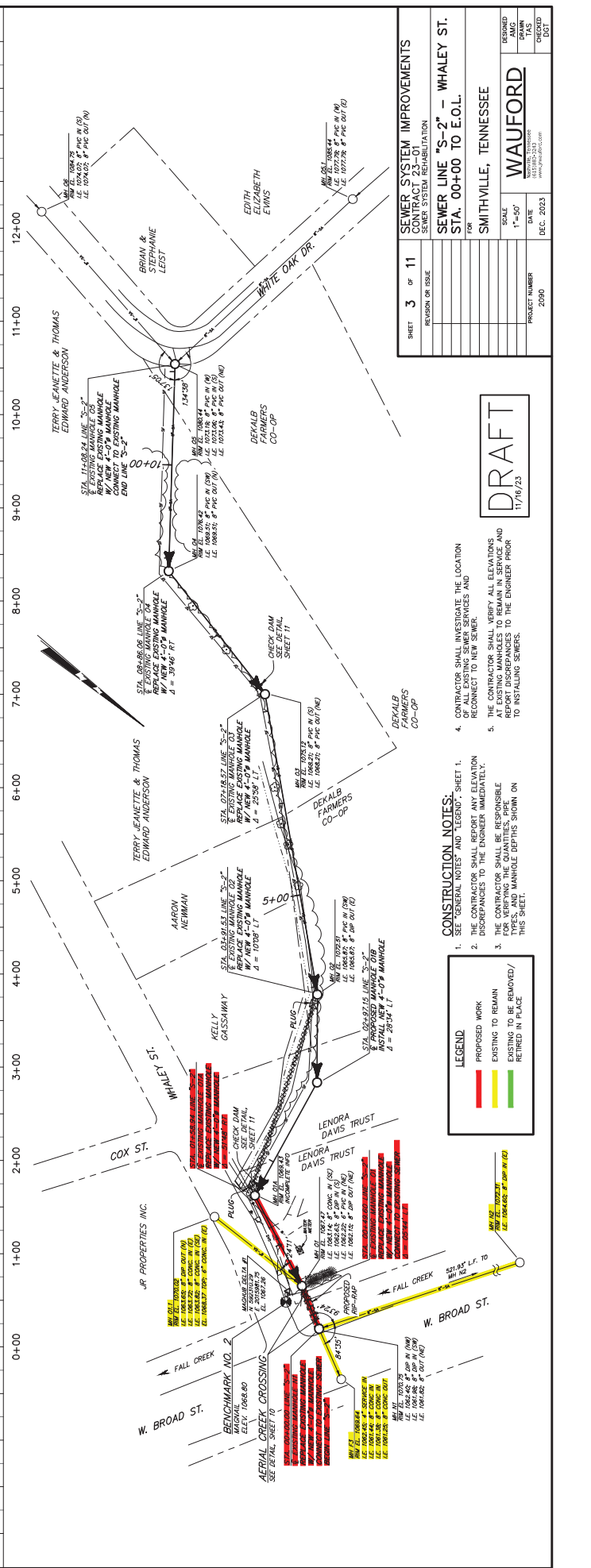
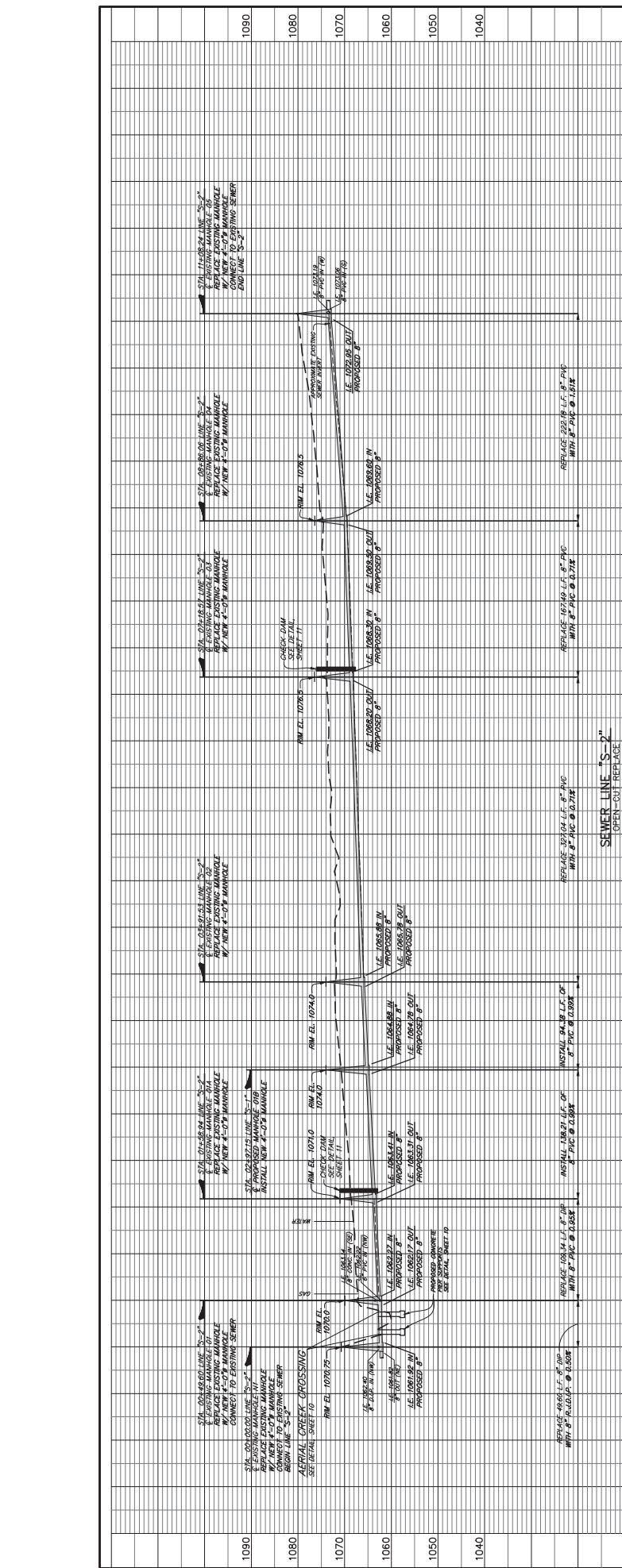
2. The Tennessee Water Quality Control Act of 1977, as amended **{Tennessee Code Annotated Section 69-3-105}** which is outlined in the Rules of the Tennessee Department of Environment and Conservation, Division of Water Pollution Control, and its **General Aquatic Resource Alteration Permit for Utility Line Crossings of Streams**
3. Section 402, also referred to as the **National Pollutant Discharge Elimination System (NPDES)**, which is outlined in the Rules of the Tennessee Department of Environment and Conservation, Water Pollution Control - Storm Water Office, implements the EPA Phase I and Phase II regulations to address storm water runoff in Tennessee. Under the NPDES program any person responsible for the discharge of a pollutant or pollutants from one acre or more of land disturbance, into any waters of the United States, from any point source must apply for and obtain a permit.
4. Section 26a of the TVA Act requiring that TVA approval be obtained before any construction activities can be carried out that affect navigation, flood control, or public lands along the shoreline of the TVA reservoirs or in the Tennessee River or its tributaries (any streams or wetlands in the drainage basin of the Tennessee River).
5. Section 209 (Project Erosion and Siltation Control) of the Tennessee Department of Transportation's "Standard Specifications for Road and Bridge Construction" and any related Special Provisions of that section.
6. In addition to complying with the rules and regulations identified in (1) - (5), consideration should also be given to Class V Injection Well Permit requirements where utility work may affect runoff into a sinkhole, and Reelfoot Watershed Permit requirements where utility work affects streams, springs or wetlands in the drainage basin of the Reelfoot Lake.
7. Any regulatory permit requirements or conditions previously issued within the permits received by TOOT for highway construction, i.e. survival of trees specified as replacement or mitigation, must remain undisturbed or replaced exactly as stated by the requirements.

The regulatory agencies may be contacted at the following addresses:

Tennessee Department of Environment and Conservation Phone: 615.532.0625
Division of Water Pollution Control; Natural Resources Section
7th Floor L & C Annex, 401 Church Street
Nashville, TN 37243-1534

(For the Cumberland River and Tennessee River Valleys): Phone: 615-369-7500
Regulatory Branch
U.S. Army Corps of Engineers, Nashville District
3701 Bell Road
Nashville, TN 37214

(For the Mississippi River Valley): Phone: 901-544-0736
Regulatory Branch
U.S. Army Corps of Engineers, Memphis District
167 North Main Street, Room B-202
Memphis, Tennessee 38103-1894



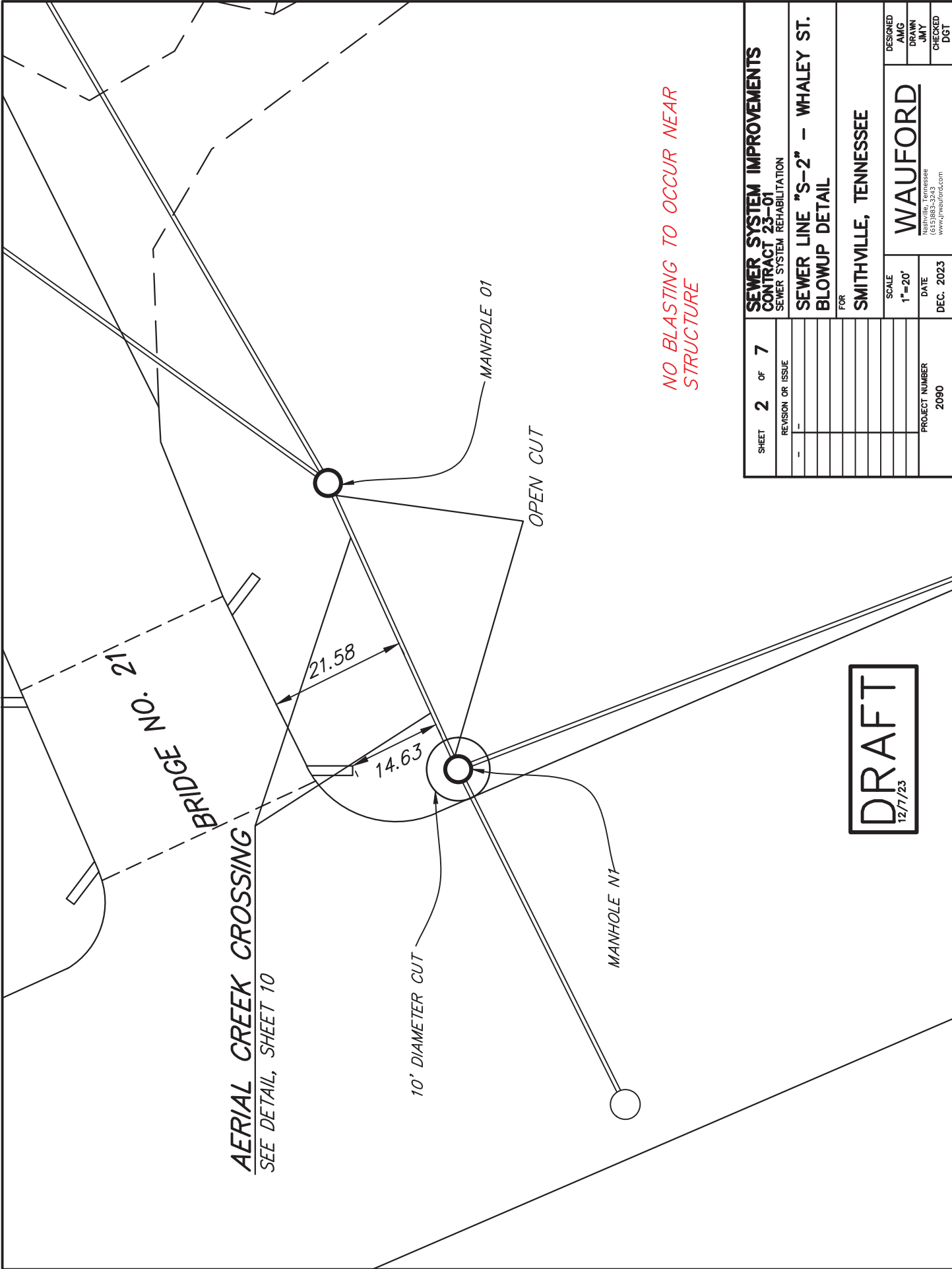
- CONSTRUCTION NOTES:**
1. SEE GENERAL NOTES AND LEGEND, SHEET 1.
 2. CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
 3. THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.
 4. CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
 5. THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.

LEGEND

—	PROPOSED WORK
—	EXISTING TO BE REMAIN
—	EXISTING TO BE REMOVED/RETIRED IN PLACE

SEWER SYSTEM IMPROVEMENTS	
CONTRACT 23-01 SEWER SYSTEM REHABILITATION	
FOR SEWER LINE "S-2" - WHALEY ST.	
STA. 00+00 TO E.O.L.	
DESIGNED BY	WAUFORD
DATE	DEC. 2023
PROJECT NUMBER	2090
SCALE	1"=50'
PROJECT NUMBER	2090
DATE	DEC. 2023
PROJECT NUMBER	2090
DATE	DEC. 2023
PROJECT NUMBER	2090

DRAFT
11/16/23

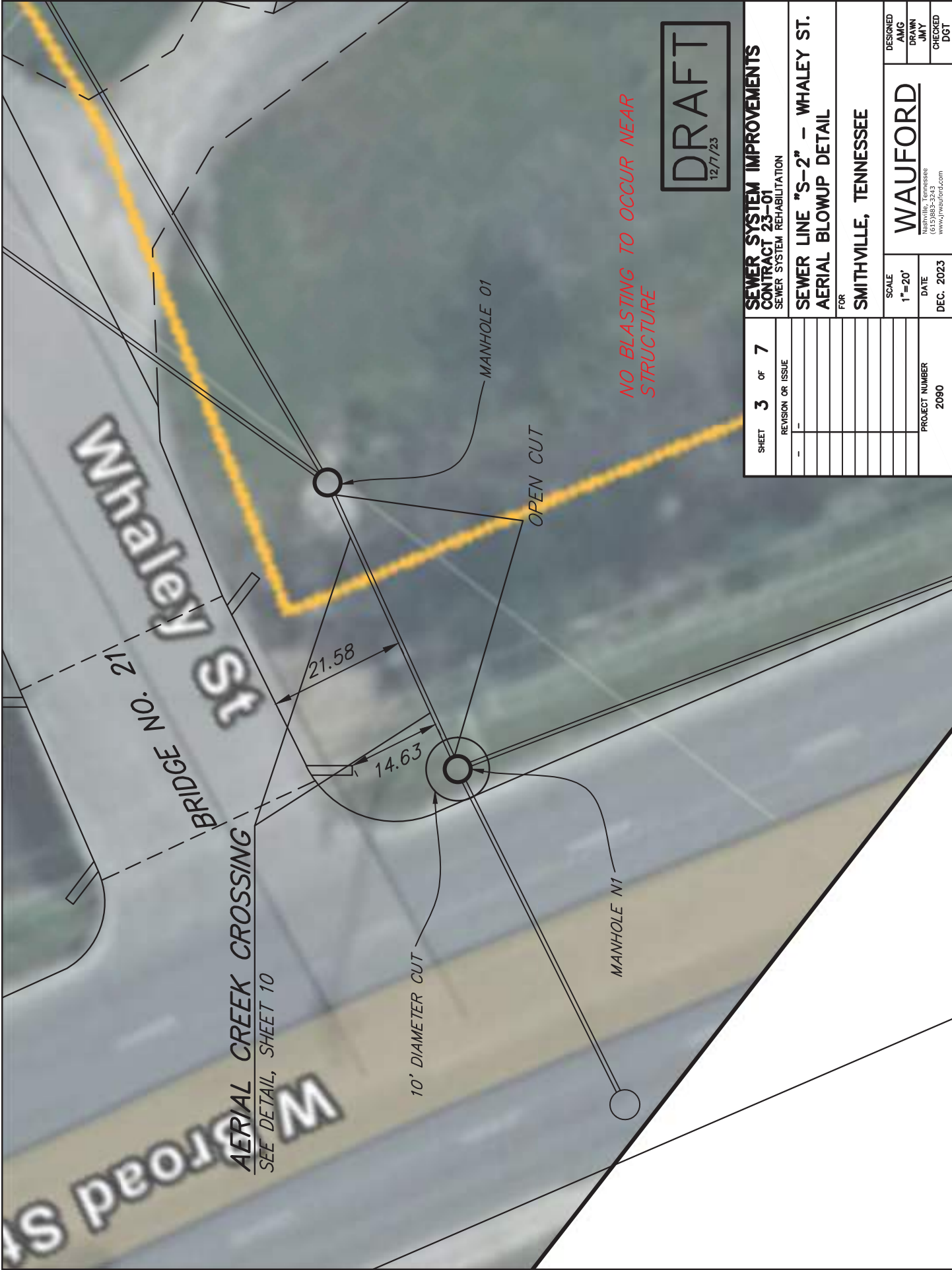


NO BLASTING TO OCCUR NEAR STRUCTURE

SHEET	2	OF	7
REVISION OR ISSUE	-		
SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION			
SEWER LINE "S-2" - WHALEY ST. BLOWUP DETAIL			
FOR			
SMITHVILLE, TENNESSEE			
SCALE	1" = 20'		
DATE	DEC. 2023		
PROJECT NUMBER	2090		
DESIGNED	AMG		
DRAWN	JMY		
CHECKED	DGT		
WAUFORD			
<small> Nashville, Tennessee (615) 983-3243 www.wauford.com </small>			

DRAFT
12/7/23

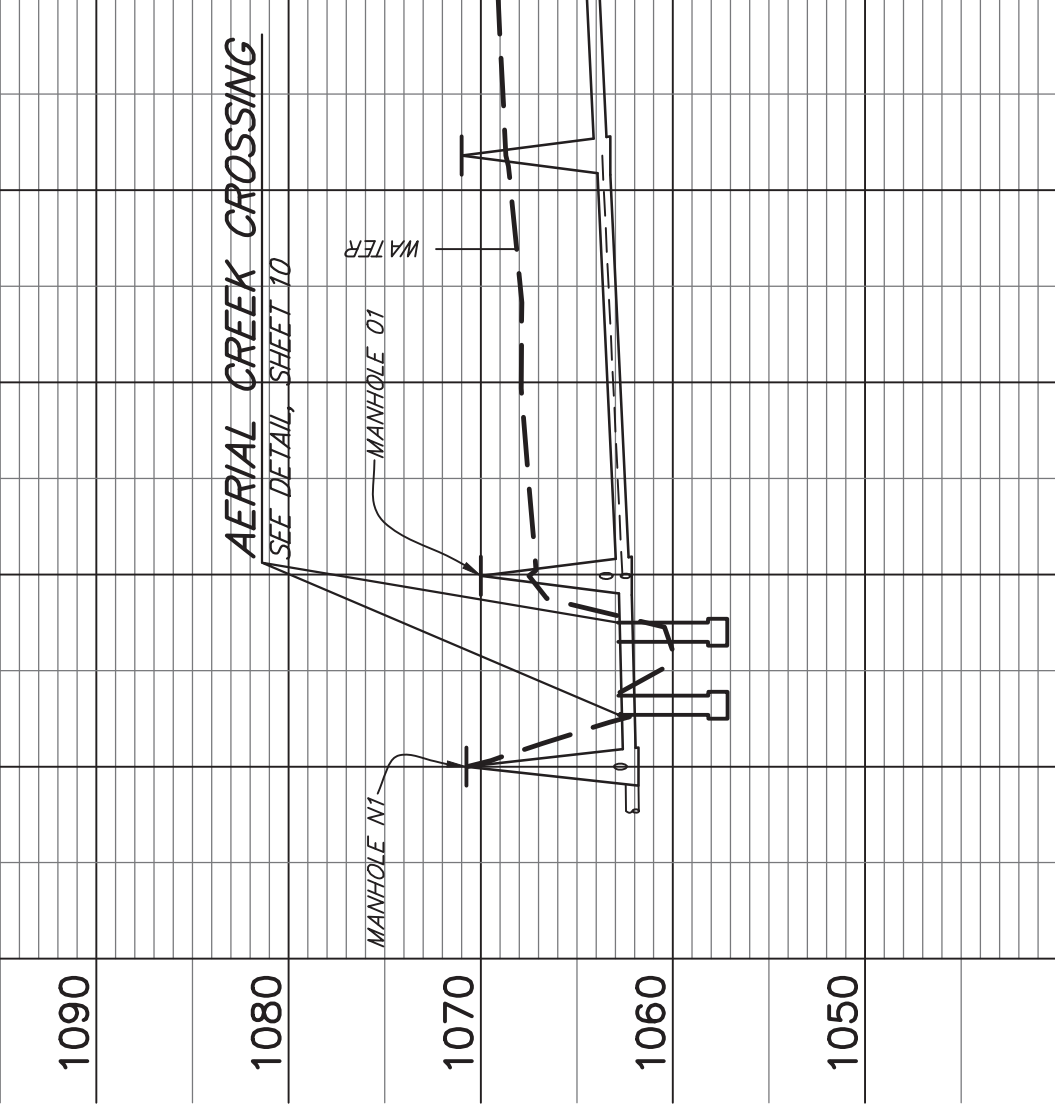
AERIAL CREEK CROSSING
SEE DETAIL, SHEET 10



DRAFT
12/7/23

NO BLASTING TO OCCUR NEAR STRUCTURE

SHEET	3	OF	7
REVISION OR ISSUE	-		
SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION			
SEWER LINE "S-2" - WHALEY ST. AERIAL BLOWUP DETAIL			
FOR SMITHVILLE, TENNESSEE			
SCALE	1" = 20'		
DATE	DEC. 2023		
PROJECT NUMBER	2080		
DESIGNED	AMG		
DRAWN	JMY		
CHECKED	DGT		
WAUFORD			
<small>Nashville, Tennessee (615) 983-3243 www.pneflow.com</small>			



DRAFT
12/7/23

SHEET 4 OF 7

1+00

0+00

	SEWER SYSTEM IMPROVEMENTS					
	CONTRACT 23-01					
	SEWER SYSTEM REHABILITATION					
	SEWER LINE "S-2" - WHALEY ST.					
	BLOWUP PROFILE DETAIL					
	FOR					
	SMITHVILLE, TENNESSEE					
	SCALE	DESIGNED				
	1"=20'	AMG				
		DRAWN				
		JMY				
		CHECKED				
		DGT				
	PROJECT NUMBER	WAUFORD				
	2090	Nashville, Tennessee (615)883-3213 www.wauford.com				
		DATE	DEC. 2023			

REGION 2 - TEMPORARY TRAFFIC CONTROL PERMIT REQUEST

COUNTY	Click to select.	ROUTE TYPE	Click to select.	ROUTE #	Click to enter.	DIRECTION	Click to select.
ROAD NAME		Click to enter.					
MILE MARKER BEGINNING AND ENDING		Click to enter text.					
LOCATION AREA DETAIL (EXAMPLE: BETWEEN 1ST AVE and 3RD AVE)		Click to enter text.					
ROADWAY IS # OF LANES WIDE		Click to enter text.		# OF LANES TO REMAIN OPEN		Click to enter text.	

TYPE OF CLOSURE (Check Box)	<input type="checkbox"/> Shoulder	<input type="checkbox"/> Single Lane	<input type="checkbox"/> Multiple Lanes	<input type="checkbox"/> Mobile- 1 Lane	<input type="checkbox"/> Rolling Roadblock- All Lanes	<input type="checkbox"/> Flagging Operation 1 Lane Each Way	<input type="checkbox"/> Lane Shift (maintaining same # of lanes)
DURATION	<input type="checkbox"/>	Working Hours Only (Removed Daily)		<input type="checkbox"/>	Left in Place (24/7) *Requires pre-approval of valid reason for leaving in place		

START DATE	Click to enter a date.	TIME	Select t.	<input checked="" type="checkbox"/>	am	<input type="checkbox"/>	pm	TO	2:00	<input type="checkbox"/>	am	<input type="checkbox"/>	pm
END DATE	Click to enter a date.												
RAIN DATE - ROLLING ROADBLOCKS	Click to enter a date.	TIME	Select t.	<input type="checkbox"/>	am	<input type="checkbox"/>	pm	T O	Select.	<input type="checkbox"/>	am	<input type="checkbox"/>	pm

WORK BEING PERFORMED INCLUDING TRAFFIC CONTROL DEVICES BEING USED (i.e. FLAGGERS, SIGNAGE, DETOURS, etc.)	Click to enter text.
ONSITE COORDINATION MEETING PLACE AND TIME (include time zone)	Click to enter text.

REQ #/PERMIT #	Click to enter text.	TDOT INSPECTOR	Click to enter text.
-----------------------	----------------------	-----------------------	----------------------

UTILITY / UTILITY CONTACT		OFFICE PHONE / CELL PHONE	
CONTRACTOR/SUBCONTRACTOR CONTACT	Click to enter text.	OFFICE PHONE / CELL PHONE	Click to enter text.
WORK PERFORMED BY	Click to enter text.		
TRAFFIC CONTROL INSTALLED BY	Click to enter text.		
TRAFFIC CONTROL SUPERVISOR	Click to enter text.	PHONE	Click to enter text.

- REQUEST FORM SHOULD BE SUBMITTED **FIFTEEN (15) DAYS PRIOR** TO REQUESTED CLOSURE DATE.
- WORKING DATES ARE SUBJECT TO ONGOING TDOT PROJECTS OR OTHER FACTORS THAT MUST TAKE PRIORITY.
- A TRAFFIC CONTROL PLAN MUST BE ATTACHED FOR ALL LANE CLOSURE AND/OR ROAD CLOSURE REQUESTS.
- A DETAILED PLAN OF OPERATION SUMMARY MUST BE ATTACHED FOR ALL ROLLING ROADBLOCK REQUESTS AND SHALL INCLUDE STARTING LOCATION, SPEED/DISTANCE CALCULATIONS, AND TYPE OF QUEUE PROTECTION.
- THE TDOT TRAFFIC MANAGEMENT CENTER (TMC) RESPONSE SUPERVISOR LACY WORD MUST BE NOTIFIED @ (423) 593-7945 AT LEAST FIFTEEN (15) DAYS PRIOR TO THE START OF ROLLING ROADBLOCKS.**

PERMIT CONTACT	Jake Somebody	PHONE	555-000-1111
PERMIT COMPANY	Any Company	DATE	2/4/2022

Permit Request Form should be submitted by email to TDOT.R2.Util@tn.gov.

If you have questions, please call (423) 634-3160 or (423) 510-1276.

Lane Closure Information Sheet

No person shall close a State Route or Interstate, or portion thereof, or restrict or divert traffic, without authorization from the Tennessee Department of Transportation (TDOT) as per the TDOT & Traffic Bylaw.

Any construction zone on a roadway must conform to State Regulations and the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). Any approval given by TDOT is with the understanding that all signs and delineators fully conform to those requirements at all times.

All completed requests must be submitted by the applicant within FIFTEEN (15) business days in advance of any work. This provides time to review the application and update the traffic control plan. Applicant must advise Emergency Services and Local Law Enforcement of potential delays.

Work Hour Restrictions

Work on all roads is permitted from 9:00 am to 2:00 pm on weekdays (Monday through Friday) to minimize traffic disruptions. Any work conducted at night after 8:00 pm, on a Sunday, Statutory Holiday, or before 9:00 am on a Saturday must be coordinated with TDOT.

Traffic Control Diagram

Traffic Control Plans should be submitted at the time of the permit request but may also accompany the Lane Closure reporting sheet.

Bus Route

If construction work impacts bus services, the applicant will need to contact the Board of Education and/or local transit services directly with the approved lane closure permit.

Bicycle Provisions

Where there is a closure of a dedicated bicycle lane, an alternative lane should be provided when possible to avoid forcing a bicycle into a faster moving vehicle lane.

Contact Information

Completed form may be submitted immediately via e-mail during office hours, 8:00 am to 4:30 pm Monday through Friday, via Utility Department email: TDOT.R2.Util@tn.gov. For more information please call (423) 510-1276 or (423) 510-1243.

SECTION 2

TESTING AND CONTROL OF MATERIALS

1. Scope

This Section together with such additions, deletions, or modifications, if any, as may appear in any other particular Section of these Detailed Specifications shall govern the furnishing and testing of materials to be used in the work.

Materials of construction, particularly those upon which the strength and durability of the structure or the integrity of a pipeline may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

2. Cost of Tests and Selection of Testing Agencies

All materials and equipment used in the construction of the project shall be subject to adequate review and testing in accordance with accepted standards. The laboratory or inspection agency will be selected by the Contractor subject to the approval of the Engineer and the Owner. THE CONTRACTOR SHALL PAY FOR ALL DULY AUTHORIZED LABORATORY INSPECTION AND/OR TESTING SERVICE.

3. Sources of Supply

The Contractor shall submit a list indicating their proposed sources of supply of all materials including manufactured items and receive the Engineer's approval prior to the placing of orders. The Engineer may require representative samples of any materials prior to approval of the source. The Engineer's approval of the source of any sample shall not be construed to relieve the Contractor of furnishing materials which fully meet all provisions of these Detailed Specifications.

If it is found that sources which have been approved do not furnish uniformly acceptable products, the approval may be withdrawn. The Contractor and his supplier shall afford the Engineer's representative opportunities for inspecting products and materials at any time during their preparation. The Contractor and/or supplier shall furnish shipment thereof, without charge.

These requirements are not intended to stifle or hinder completion but are intended to assure quality and/or performance.

4. Approval of Testing Agencies and Reports

Whenever in these Detailed Specifications review and testing of materials are required, bureaus, laboratories, and/or agencies selected by the Contractor for such inspection and testing service shall be subject to approval by the Engineer.

Documentary evidence, satisfactory to the Engineer, that the material has passed the required inspection and testing must be furnished prior to the incorporation of such materials in the work, and rejected materials must be promptly removed from the premise.

Six (6) copies of all test reports shall be sent to the Engineer's office for checking and distribution.

Test reports shall contain as a minimum (1) the name and location of the supplier's plant, (2) the name of the person gathering the sample, (3) the date of the sampling, and (4) such other like data as may be required by the Engineer.

5. Governing Specifications

It is the intention of the Engineer in the preparation of these General and Detailed Specifications to define properly the kind and quality of materials to be furnished. The standards and tentative standards of the American Society of Testing Materials (ASTM); standards of the American Waterworks Association (AWWA); standards of the American National Standards Institute (ANSI); standards promulgated by the Federal Specification Board (Fed. Spec.); American Association of State Highway and Transportation Officials (AASHTO); the Federal Aviation Agency (FAA); or other such agencies may be referred to in the Detailed Specifications. Where such standards are referred to, said references shall be construed to mean the latest amended and/or revised versions of the said standard or tentative specifications. In the selection of samples and the routine testing of materials, the testing laboratory shall follow the standard procedure as outlined by the ASTM, unless otherwise set out.

6. Extent of Inspection and Testing Service

It is intended that materials of construction, particularly those upon which the strength and durability of structures may depend, shall be inspected and tested to establish conformance with specifications and suitability for uses intended. The following is a schedule showing the extent of testing and requirements and methods of reporting. If it is found that this list does not cover all items that will require testing, then such materials shall be tested as directed by the Engineer.

7. Cement

Cement shall have been shipped from the mill not more than three (3) months prior to receipt on the work. Testing and certification of ASTM C 150 shall apply and shall be supplied by the manufacturer.

8. Fine Aggregate (For Use in Cement Concrete)

Fine aggregate shall consist of natural river sand except that upon request the Engineer may approve manufactured sand. SAND MINED FROM HIGHLAND DEPOSITS WILL NOT BE APPROVED.

Standard tests shall be made in advance of concreting by an approved independent laboratory per ASTM C 33 and ASTM C 40 on each fine aggregate proposed to be used. Other tests being satisfactory, the aggregate may be used pending results of 28-day strength tests.

9. Coarse Aggregate (For Use in Cement Concrete)

Standard tests shall be made in advance of concreting by an approved laboratory on each grading of each coarse aggregate proposed to be used per ASTM C 33.

10. Advance Tests of Concrete Design Mix(es)

Before commencement of concrete placing and after approval of cement and aggregates, an independent laboratory shall make from a single batch for each proposed mix a set of six (6) standard four (4) inch cylinders per ASTM C 31 and test in accordance therewith: Test two (2) cylinders at seven (7) days, two (2) cylinders at fourteen (14) days, and two (2) cylinders at twenty-eight (28) days per ASTM C 39. Two (2) beam flexure tests as per ASTM C 78 shall likewise be made and tested from the design batch if the total requirement exceeds 1,000 cubic yards.

The requirements for tests may be modified at the Engineer's discretion without prejudice to the Engineer later requiring same (if he becomes in doubt about the quality of the concrete) if less than fifty (50) cubic yards are required.

11. Reinforcing Steel

A certificate of origin and affidavit will be required for all reinforcing steel. All reinforcing steel shall be manufactured in the United States unless specifically approved by the Engineer. Reinforcing steel shall be inspected for section, rust, shape and dimension. The manufacturer shall supply test reports depicting inspection results plus heat numbers.

12. Structural Steel

Structural steel shall be evaluated at the mill and shop for each heat number to determine compliance with specification designated in these Detailed Specifications.

13. Steel Bar Joists

The manufacturer shall supply test data proving the efficiency of the design of the proposed joists for the purpose intended and certifies that the joists, as furnished, are in accordance with project requirements and with the Standard Specifications for Steel Joists as given in the current handbook "Steel Joist Construction" published by the Steel Joist Institute or other specifications designated in these Detailed Specifications.

14. Brick

Visual examination for shape, color, soundness, cracks, and other imperfections.

15. Building Stone

Visual examination for shape and color.

16. Concrete Pipe

Visual examination at the site, as practicable, per ASTM or other designated specification together with certified test reports from the supplier.

17. Polyvinyl Chloride (PVC) Pressure Pipe

Examination at the site, as practicable, per AWWA, ASTM or other designated specification plus certified test reports from the supplier as performed by the manufacturer.

The following test results shall be supplied by the manufacturer:

Long-Term Pressure Test (Min.)	1,000 hours at 400 psi
Burst Pressure Short Term (Min.)	630 psi
Impact (Min.)	60 ft/lbs at 72°F. 16 ft/lbs at 0°F.
Acetone	20 minutes no flaking
Crush (Ring Section)	100% crush no cracking
Vacuum Test (Min.)	22 in/HG for 1 hr.

18. Polyvinyl Chloride (PVC) Sewer Pipe

Examination at the site, as practicable, per ASTM or other designated specification plus certified test reports from the supplier. Testing shall be in accordance with the requirements of ASTM D 2412. Minimum "pipe stiffness" (F/Y) at five (5) percent deflection shall be forty-six (46) psi or greater for all pipe sizes. The result of all tests shall be reported to the Engineer.

19. Ductile Iron Pipe and Special Castings

Each piece of pipe shall bear the manufacturer's name or trademark and the date cast. Each piece of pipe should also be certified by the manufacturer to have met the requirements of the governing ASTM or other designated specification. Also, each piece shall be visually inspected in the field for specification conformance.

20. Grey Iron Castings

- a. Field Examination: For dimensions, coating, holes hammer test.
- b. Laboratory Tests: Certified test reports by foundry.

21. Polyethylene Pipe

Examination at the site, as practicable, per ASTM or other designated specification plus certified test reports from the supplier. Testing shall be performed in accordance with the procedure outlined in ASTM D 2513.

SECTION 3

CONCRETE AND REINFORCING STEEL

1. Scope

This Section covers the materials, mixing, transporting, and placing of all concrete and reinforcing steel including all labor, materials, and equipment.

The provisions of Section 2, Paragraph 2. Cost of Tests and Selection of Testing Agencies applies to this Section of these Detailed Specifications.

Where brand names or manufacturers are used in this Section, it is not intended that the use of products of equal quality and function by other manufacturers be prohibited. Concrete admixtures may be as furnished by Master Builders, Grace Construction Materials, SIKA Chemical Corporation, or approved equal. Concrete forms and accessories may be furnished by Universal Form Company, Dayton Sure-Grip and Shore Company, Heckman Building Products, or equal.

2. Reference Codes and Standards

All work covered by this Section of these Detailed Specifications shall be performed in accordance with the applicable portions of the following American Concrete Institute (ACI) and Concrete Reinforcing Steel Institute Standards (CRSI), as modified in this Section.

<u>ACI 224.3R:</u>	“Joints in Concrete Construction”
<u>ACI 301:</u>	“Specifications for Structural Concrete”
<u>ACI 302.1R:</u>	“Guide for Concrete Floor and Slab Construction”
<u>ACI 305R:</u>	“Guide to Hot Weather Concreting”
<u>ACI 306R:</u>	“Guide to Cold Weather Concreting”
<u>ACI 315:</u>	“Manual of Standard Practice for Details and Guide to Presenting Reinforcing Steel Design Details”
<u>ACI 318:</u>	“Building Code Requirements for Structural Concrete”
<u>ACI 347R:</u>	“Guide to Formwork for Concrete”
<u>ACI 350:</u>	“Code Requirements for Environmental Engineering Concrete Structures”
<u>CRSI-MSP:</u>	“Manual of Standard Practice”

The most recent published version (as of the project bid date) of any standard listed in these Detailed Specifications shall apply.

3. Class of Concrete

Concrete shall be two (2) classifications as follows:

CLASS "A" - All concrete shall be Class "A" unless otherwise shown on the Plans. ALL reinforced concrete shall be Class "A". Class "A" concrete shall possess the following characteristics and/or proportions of materials.

Minimum Cement Content: 6.0 bags (564 pounds) per cubic yard.

NO FLY ASH WILL BE ALLOWED

Minimum 28-day compressive strength: 4,000 psi average any three (3) cylinders.

Anticipated 28-day compressive strength: 4,000 psi plus.

Slump: Three and one-half (3½) to six (6) inches in walls and columns and piers. Two and one-half (2½) to five (5) inches in slabs, beams, and footings.

Admixtures: A retardant may be required where slow set is desired; where quick set is desired Portland Cement content of 6.2 bags may be required. Air entraining agents optional and subject to Engineer's approval. Additional special admixtures may be specified in subsequent sections of these Detailed Specifications.

CLASS "C" - Concrete used for anchors, kickers, and encasement for pipe lines, for subfoundations and mass footings, and for fill shall be Class "C". No concrete containing reinforcement shall be Class "C". Class "C" concrete shall possess the following characteristics and/or proportions of materials:

Minimum Cement Content: 5.0 bags (470 pounds) per cubic yard.

Minimum 28 day compressive strength 2,500 psi - average of any three (3) cylinders.

NO FLY ASH WILL BE ALLOWED

Slump: Five (5) to eight (8) inches for encasement. Two (2) to four (4) inches in subfoundations and sealing as per Paragraph 10.d. hereinafter.

Admixtures: None required.

4. Determination of Strength of Concrete

Compressive strength of concrete shall be determined by use of standard four (4) inch diameter by eight (8) inch test cylinders in accordance with ASTM C 39 and C 31.

5. Concrete Design Mixes

An independent commercial testing laboratory, approved by the Engineer, shall prepare a design mix for each Class "A" and Class "C" concrete and submit five (5) copies to the Engineer for general approval of the proportions and materials. The design mix shall be accompanied by the quality tests of the materials which are proposed in accordance with Section 2. Testing and Control of Materials, Paragraphs 5, 8, 9, and 10 of these Detailed Specifications. The sources of supply and the producer of the concrete, if a ready-mix plant, shall be subject to all the requirements of Section 2. Testing and Control of Materials, and particularly to Paragraph 3. Sources of Supply, thereof. After general approval of the materials and proportions the tests required in Paragraph 10. Advance Tests of Concrete Design Mix(es) of Section 2 shall be submitted for approval. No concrete may be placed prior to submission and approval of the design mix and of the test results. The cost of obtaining an approvable concrete mix will be paid for by the Contractor.

6. Materials for Concrete

a. Portland Cement

Portland Cement shall be of American manufacture and shall conform to the "Standard Specifications for Portland Cement" (ASTM C 150), of the American Society for Testing and Materials and shall be Type II with an equivalent alkali ($\text{Na}_2\text{O} + 0.658 \text{K}_2\text{O}$) content of less than 0.60 percent and shall have been shipped from the mill not more than three (3) months prior to incorporating into the work unless specifically waived in writing by the Engineer. For job site mixing all cement shall be in sacks. FLY ASH IS NOT AN ACCEPTABLE SUBSTITUTE FOR PORTLAND CEMENT. PREMIXED BAG CONCRETE IS NOT AN ACCEPTABLE SUBSTITUTE FOR PORTLAND CEMENT.

b. Water

Water used in concrete shall be clear and free from objectionable substances such as oil, acid, alkali, vegetable matter, clay, or silt. Water of doubtful quality shall be tested in briquettes which shall reach a strength

equal to that of similar briquettes made with water of known satisfactory quality.

c. Admixtures

An air entraining admixture equal to Master Builders AE200, Darex A.E.A. or Aermix, meeting the requirements of ASTM C 260 for Air Entraining Admixtures may be used but is not required. Use of such admixtures is subject to the approval of the Engineer.

The amount of air-entraining admixture to be used will be determined by the percent of air entrained in the concrete. The limits of air will be five (5) percent plus or minus one (1) percent.

The concrete when an approved air entraining agent is used shall have a reduction in weight of not more than three (3) to six (6) pounds per cubic foot as compared with concrete of the same consistency and cement content made without the use of the agent. The specified cement factor shall be maintained by adjusting the quantity of aggregate and water used to the satisfaction of the Engineer. Reduction in the twenty-eight (28) day strength as specified will not be permitted. The use of any other admixture will not be permitted without the written consent of the Engineer as to the admixture to be used and its proportion in the mix.

d. Fine Aggregate

Sand for concrete shall consist of clean, hard, durable uncoated particles, free from lumps of clay, soft or flaky material, loam, and organic matter. In no case shall fine aggregate containing lumps of frozen material be used. Fine aggregate containing appreciable quantities of mica, shale, slate, or other soft grains shall not be used. It shall not contain more than two (2) percent by weight of material which may be removed by the elutriation test. Sands which do not pass the standard colorimetric tests shall not be used unless it can be shown that the failure to pass is caused by particles of lignite or coal. Fine aggregate shall conform to ASTM C 33 with gradation as follows:

<u>Screen</u>	<u>Percent Passing</u>
No. 4	95 -100
No. 16	45 - 95
No. 50	10 - 30
No. 100	2 - 10

ONLY NATURAL RIVER SAND OR SPECIALLY APPROVED MANUFACTURED SAND SHALL BE USED.

e. Coarse Aggregate

Unless otherwise specified, coarse aggregate may be either crushed limestone, or crushed gravel. Coarse aggregate shall show no evidence of disintegration, and the weighted percentage of loss shall be not more than ten (10) percent by weight when subjected to five (5) alternations of the sodium sulphate test for soundness. It shall be composed of clean, hard, durable, uncoated particles free from deleterious matter. Except for gradation, coarse aggregate shall conform to the requirements of ASTM C 33. The coarse aggregate shall meet the following grading requirements.

Passing 1 1/2" square laboratory sieve	-	100%
Passing 1" square laboratory sieve	-	90 -100%
Passing 3/4" square laboratory sieve	-	50 - 75%
Passing 3/8" square laboratory sieve	-	10 - 25%
Passing No. 4 square laboratory sieve	-	0 - 5%

7. Proportioning of Materials for Concrete

During formulation of the design mix the proportions of aggregate to cement for the grade of concrete specified shall be such as to produce concrete of proper workability. The proportion by dry weight of fine to combined aggregates shall be controlled between limits of thirty (30) to forty-five (45) percent as directed by the Engineer, but the mix shall be so controlled as to use the minimum fine and the maximum coarse aggregate which will give a satisfactory and workable mix.

Measurement of cement, fine and coarse aggregate for all classes of concrete shall be by direct weight upon an approved type of scales. Water shall be accurately measured in gallons by equipment accurate to plus or minus five (5) percent.

The weight of cement in unopened sacks as packed by the manufacturer will be considered to be ninety-four (94) pounds per sack. The method of measuring the water shall be accurate and readily adjustable so that the proper ratio of water and cement in each batch may be secured. It is the intention of the Engineer to control rigidly the quantity of water in each mix and to get the densest possible concrete. The Engineer may require calibration of weighing equipment. Equipment for measuring water shall be checked and adjusted daily.

8. Source of Supply of Concrete

a. General

Concrete to be placed in the work may be proportioned and mixed by the Contractor on the site of the work or may be proportioned and mixed in a

"Ready-Mix" central plant. Either plant shall be subject to the Engineer's approval of equipment and adequacy prior to the commencement of concrete placement operations. Such approval may be withdrawn by the Engineer if the concrete becomes non-uniform or for other reasons. In the case of such withdrawal of approval the Contractor shall either cause corrections necessary to obtain another approved source.

b. Mixing on Job Site

When small quantities of concrete are required at remote sites or the travel time from a ready-mix plant is deemed excessive or an approvable ready-mix plant is unavailable, the Engineer may approve job site mixing. The Engineer will require what is deemed adequate mixing and quality control equipment.

c. Mixing at a Central Plant

The name and location of the proposed plant and its sources of materials shall be submitted to the Engineer for approval. The Engineer may inspect the plant facilities and proposed mixer trucks and make a determination as to whether they are adequate to meet the quality control required. The Engineer's determination in this case will be FINAL and BINDING. The concrete shall be mixed and handled in accordance with the requirements of ASTM C 94 except as otherwise specified herein. During the period of placing concrete the Engineer shall be afforded free access to the plant for such examinations as the Engineer deem necessary including the stationing of a separate resident project representative at the plant during batching operations if deemed desirable.

(1) Loading Tickets

Loading tickets shall be initialed by the "weight man" stating (1) the Class of concrete, (2) the name of the project, (3) the time of the batching, and (4) the batch weights of each material including water. When the mixer truck arrives on the job site a copy of the ticket shall be given to the resident project representative BEFORE the concrete is placed. Any additional materials added shall be noted.

(2) Transporting

Concrete shall be transported only in approved mixer trucks which will mix the concrete enroute. In extreme hot weather, when approved by the Engineer, the required amount of water may be added upon arrival of the truck at the job site in order to avoid pre-set of the mix enroute. Such approval requires close cooperation

of all concerned and will be given only if equipment to accurately measure the water is available and only if strength and slump tests are found to be uniform; approval may be withdrawn for any reason including lack of cooperation. Concrete which reaches the job in a pre-set condition or fails to meet slump requirements will be rejected and shall be removed from the job site. No retempering with water or any other admixture will be allowed except in special emergencies and under the conditions set in Paragraph 9. Alteration of Concrete Slump (Retempering).

9. Alteration of Concrete Slump (Retempering)

ANY ALTERATION OF CONCRETE IS TOTALLY THE CONTRACTOR'S RESPONSIBILITY.

The concrete shall be mixed only in such quantities as required for immediate use, and shall be used while fresh and before initial set has taken place. The addition of water or some other plasticizer (sometimes called retempering) to a ready-mix truck at the job-site or such addition at any place more than ten (10) minutes after the original water charge has been added and mixing commenced is strictly prohibited except as provided herein. Any concrete which arrives on the job in which initial set has begun shall be wasted and not used in the work.

At the request of the Contractor, the Resident Observer may permit water and Portland cement to be added at the rate of twelve (12) gallons of water per sack of cement. If Portland Cement is not available without too great a time delay the Contractor may add up to one (1) gallon of water per cubic yard at his own risk.

If concrete arrives on the job too wet the slump may be altered by adding Portland cement and thoroughly mixing.

Any concrete which is altered shall have double the specified number of cylinders taken after said alteration and no work shall be added onto the pour in question until the quality is assured.

10. Placing of Concrete

a. General

All concrete shall be placed in daylight or daylight conditions approved by the Engineer and ONLY AFTER the Engineer's representative has been notified and has inspected and approved the placement of reinforcing steel and the general condition of form work.

All water and accumulated debris shall be removed from forms and observation holes shall be left in wall forms near the bottom for such

purpose. For footings and on-grade slabs water shall be diverted or otherwise removed. For walls, beams, columns, and supported slabs the forms shall be wetted with water so as to tighten joints. Runways, where used, shall be independently supported so as to prevent disturbance of the forms.

CONCRETE WITHIN ANY UNIT OF WORK BETWEEN CONSTRUCTION JOINTS SHALL BE PLACED CONTINUOUSLY TO PREVENT "COLD JOINTS". New concrete shall be placed AGAINST each succeeding batch so as to build up a continuous monolithic "pour".

b. Cold Weather Placing of Concrete

No concrete shall be placed when the air temperature in a shaded area away from artificial heat is 40°F and falling. Concrete may be mixed and placed under the conditions set forth herein if the air temperature in the shade is 35°F and rising provided the Contractor makes provisions for heating to maintain 45°F and there is a U. S. Weather Bureau forecast for 45°F or above. When the air in the shade falls below 50°F the mixing water shall be heated (Maximum 140°F) so that the temperature of the concrete when deposited is between 60°F and 75°F. Several thermometers shall be maintained by the Contractor at the site of the work and placed as directed by the Engineer.

The Contractor shall supply such heating equipment as vented stoves and/or salamanders as are necessary to keep the temperature of the air surrounding the concrete from falling below 45°F until test specimens indicate the concrete has attained a compressive strength of 2,500 psi or greater or for a period of five (5) days. The Engineer may require additional heating units to be placed in operation if in the Engineer's opinion the concrete might be endangered by an additional drop in air temperature. When the required heating period has expired the concrete shall not be allowed to cool at a rate faster than 1°F per hour.

c. Hot Weather Placing of Concrete

When the temperature of the air exceeds 90°F or the average temperature for the period of placement exceeds 85°F or is predicted by a U.S. Weather Bureau forecast to exceed said limits special precautions are required. The temperature of the concrete shall not be allowed to exceed 90°F. Ice shall be substituted for mixing water prior to the addition of the other materials to mixer in order to maintain temperature. The ice shall be accurately weighed (8.34 pounds = 1 gallon) prior to its being placed in the mixer and the remaining mixing water reduced correspondingly. The temperature shall not be reduced below 65°F.

The maximum time allowed in the mixer by ASTM C 94 (either three hundred [300] revolutions or one and one-half [1½] hours whichever occurs first) shall be considered the acceptable maximum at air temperatures between +45°F and +70°F. The following maximum allowables shall apply at various temperatures:

<u>Average Air Temperature</u>	<u>Maximum Time or Revolutions</u>
45°F - 70°F	1½ hours or 300
70°F - 80°F	1 hour or 200
80°F - 90°F	45 min. or 150
90°F - 100°F	30 min. or 100
100°F	No placing allowed

Extreme care shall prevail in the pouring of thin slabs and other thin sections. All forms, reinforcing steel, and/or subgrades shall be wet with cool water as shall all mixers, chutes, *etc.* immediately prior to concrete placement. No puddles of water shall be present at the time of placement.

d. Placing Concrete in Foundations

Whenever possible all foundation excavations shall be pumped dry and concrete deposited in the open. If it is not possible to proceed in this manner, a seal of concrete of sufficient thickness to resist any possible uplift shall be deposited under water in accordance with special directions of the Engineer. After the seal has set sufficiently, the foundation shall be pumped out; and the balance of the concrete placed in the dry.

e. Placing Concrete in Forms

Concrete shall be conveyed as soon as possible after mixing to the place in which it is to be deposited. The method and manner of placing shall be such as to avoid the possibility of segregation or separation of the aggregates or the displacement of the reinforcement. The concrete shall be deposited so as to bring the construction up level and during the process, it shall be vibrated, rammed, spaded, or agitated by satisfactory tools so as to produce a compact concrete of maximum density with all spaces or voids filled and presenting a smooth, unbroken surface, free from coarse aggregate to exposed honeycomb spaces when the forms are removed.

f. Pumping or Chuting Concrete

If concrete is conveyed by pumps or chutes, the equipment shall be of such size and design as to insure a practically continuous flow. The slope of the chute or the design of the conveyance tubes shall be such as to

allow concrete of a satisfactorily dry consistency to flow without separation of the ingredients. The chute or tube shall be thoroughly flushed with water before and after each run, discharging outside of the forms. Should stoppage occur in the chute or tube during concreting and the use of water be required to clean it, the water and all material removed from the chute or tube shall be wasted outside the forms. If, in the opinion of the Engineer, the arrangements for placement are such as to preclude the securing of watertight, smooth, dense concrete in any portion of the work, other and satisfactory means of transporting concrete shall be employed by the Contractor.

g. Vibrating Concrete

All concrete shall be vibrated in the forms as it is placed with mechanical internal vibrators maintaining 5,000 impulses per minute and approved by the Engineer. At least one (1) extra vibrator in operating condition shall be maintained at the job site in case of emergency.

11. Curing of Concrete

a. General

All concrete shall be protected from too rapid drying or curing by the covering of surfaces with burlap, curing compound as per ASTM C 309, Type 1, or other suitable means immediately after finishing, concrete shall be kept moist for a sufficient period of time to insure satisfactory curing as directed by the Engineer, normally three (3) consecutive days.

b. Cold Weather Curing

If concrete is placed in cold weather the Contractor shall provide the necessary heat to insure that the temperature of the air immediately surrounding the fresh concrete does not drop below 45°F at any time, at any place, and that the concrete is uniformly kept warm until the concrete has obtained a compressive strength of 2,500 psi or greater for at least five (5) days. The variations in temperature shall not exceed 10°F and no hot air shall be allowed to blow directly upon the fresh or curing concrete. The surfaces shall be protected from frost by covering with suitable blankets at any time the temperature is forecast to drop below 50°F.

c. Hot Weather Curing

During the curing of concrete in hot weather all surfaces shall be kept covered with burlap sacks or polyethylene and kept moist for a period of five (5) days after placing, after which the protective covering shall be allowed to gradually dry out.

The most extreme care shall be exercised to maintain a moist surface on slabs during the first twenty-four (24) hours after placement, and the Engineer, during periods of low humidity compounded by surface winds, may require continual wetting of the surface for a period of twenty-four (24) hours. After the first twenty-four (24) hours the surface shall be wet down when work is begun in the mornings and also at intervals during the day if required by the Engineer and left wet in the evenings.

12. Joints in Concrete

a. General

The placement of concrete shall be as shown on the Plans and/or approved "concrete placing plans" between construction joints. In general a unit shall not exceed thirty (30) feet in each direction nor more than nine hundred (900) square feet although the Engineer may approved larger pours when same are submitted in five (5) copies under the same procedure outlined for shop drawings and are to be considered as a shop drawing.

Vertical construction joints shall be provided at intervals of thirty feet (30') or less from corners and between construction joints on walls enclosing water holding basins above grade and dry spaces below grade. Horizontal construction joints shall be provided at intervals of thirty feet (30') or less in walls enclosing dry spaces below grade. Structural slabs on grade reinforced with deformed bars may be placed in pours of any dimension desired between construction joints.

Where a construction joint is made, laitance, all weak concrete, and foreign matter shall be removed and the concrete roughened.

On all joints except "expansion joints" the reinforcing shall be set to extend into subsequent sections of construction so as to make the work a monolith. JOINTS SHALL NOT BE MADE EXCEPT AS THE ENGINEER MAY INDICATE, APPROVE, OR DIRECT TO PRESERVE THE STRENGTH, FACILITY OF PLACEMENT, OR WATERTIGHTNESS OF THE STRUCTURES. In general, the locations of the joints are shown on the Plans; but these may be changed if the Contractor requests and the Engineer approves. A period of at least forty-eight (48) hours shall elapse between the placement of adjacent concrete units or pours.

b. Watertight Expansion Joints

An expansion joint is defined as a joint specially constructed to allow movement as shown on the Plans. Expansion joints shall be constructed in accordance with the details shown on the Plans utilizing PVC waterstop,

asphalt expansion joint filler, and SIKAFLEX 2c NS sealant or equal, and shall be watertight in water holding structures or dry wells. The expansion joint filler shall be the asphalt type conforming to the requirements of ASTM D 994, W. R. Meadows, Inc. or equal. The exterior sealant shall be a two (2) part polysulfide rubber joint sealant conforming to the requirements of ASTM C 920 for Class 25 sealants. The filler shall be applied so as to prevent "tracking" if accidentally stepped on.

c. Joints in Footings and Walls

Construction joints in footings and walls shall be located across areas of low shearing stress and shall be provided with keyways. Keyway details shall be as shown on the Plans or in special cases as directed. Waterstops shall be provided where shown on the Plans.

Expansion joints shall be located where shown on the Plans using the details of construction shown on the Plans.

d. Joints in Slabs and Beams

Construction joints shall be located near the middle of spans of slabs, beams, or girders; unless a beam intersects a girder at this point, in which case the joints in the girders shall be off-set a distance equal to twice the width of the beam. In this case, provision shall be made for shear by use of inclined reinforcement. Keyways shall be provided as shown on the Plans.

Expansion joints shall be located where shown on the Plans using the details of construction shown on the Plans.

e. Waterstops and Watertightness

Dry wells and structures housing equipment shall be watertight with no visible leaks and no accumulation of water. Any visible leaks shall be repaired to the satisfaction of the Engineer. Waterstops shall be polyvinyl chloride (PVC) and shall be of the configuration/type shown on the Plans. Keyways with eight (8) inch wide PVC waterstops for construction joints shall be used where such joints are shown. All PVC waterstops shall be installed as per the manufacturer's recommendations and shall be welded watertight.

Certain waterstops may be shown on the Plans or other material for special reasons.

f. Mastic Joints

Where joint sealer or mastic joint is noted on the Plans, the joints shall be sealed with the material designated on the Plans. All materials shall be installed in strict accordance with the manufacturer's instructions, and under the supervision of a qualified representative of the manufacturer. All surfaces and slots in concrete shall be provided as required by the manufacturer of the joint material.

g. Control Joints in Non-Reinforced, Non-Structural Slabs on Grade

Control joints in slabs on-grade which are reinforced with welded wire fabric only shall be saw cut and shall be a minimum of one-eighth inch (1/8") wide by one-fourth (1/4) the section in depth. Sawing of control joints shall be completed between twelve (12) and twenty-four (24) hours after finishing of the concrete surfaces. Timing of saw cutting shall be such that the slabs have sufficiently cured where no dislodging of aggregate occurs during the sawing operations.

The spacing of control joints and/or construction joints in slabs on grade shall generally not exceed fifteen feet (15').

Control joints in sidewalks shall be formed by tooling a groove downward from the surface with a one-fourth inch (1/4") edging tool. Spacing of control joints shall be equal to width of sidewalk.

h. Isolation Joints

Isolation joints to separate slabs from column footings, intersecting walls, *etc.* shall be provided where shown on the Plans. Isolation joint material shall be one-half inch (1/2") thick by the full depth of the slab, unless otherwise noted on the Plans, and shall meet the requirements of ASTM D 1994 for bituminous type performed joint filler.

Isolation joints, where shown on the Plans, separating concrete sidewalks from structures, concrete curbs, *etc.* shall be one-half inch (1/2") thick by the full depth of the sidewalk.

i. Joint Sealant

Where joint sealant is noted on the Plans and the joint sealant material is not designated, the joint sealant shall conform to the requirements of ASTM C 1516 for cold application type concrete joint sealer.

13. Non-Shrink Grout

Non-shrink grout shall be used where called for on the Plans or required to insure watertightness. The proportions of the non-shrink grout mix shall be:

15 pounds Embecco or equal
100 pounds Portland Cement
100 pounds sand
150 pounds pea gravel (may be omitted)

14. Forms for Concrete Work

a. General

If required by the Engineer, forming plans shall be submitted by the Contractor and approved by the Engineer before the forms are on the work. The Contractor may submit a plan or schedule for forming for the Engineer's consideration. The Engineer's approval of the Contractor's method of forming will be for the benefit of the Contractor and will be based on the acceptability of the finished work; in no case will the Engineer pass on or be responsible for the structural adequacy of the Contractor's forms, false-work, or other construction procedures.

Forms shall be substantial and sufficiently tight to prevent leakage of mortar. They shall be properly placed or tied together so as to maintain position and shape and insure safety to workmen and passersby. Temporary openings shall be provided where necessary to facilitate cleaning and observation immediately before depositing concrete. CONCRETE SHALL NOT BE PLACED IN ANY FORM UNTIL THE FORM AND THE RESTEEL IS OBSERVED BY THE ENGINEER. Such Engineer comment or approval does not apply to the structural integrity of the framework which is the total responsibility of the Contractor. The Contractor shall be completely responsible for the strength and adequacy of the form work and shall save the Owner and/or Engineer harmless from any claims arising therefrom for any reason.

b. False Work

All false work shall be solely the Contractor's responsibility as to strength, line, and grade, etc.; but the Engineer may disapprove work which is unworkmanlike, or in the opinion of the Engineer, will not yield the finished product required.

c. Material for Forms

The forms for the outside face of all exposed surfaces shall be of not less than one and one-half (1½) inch tongue and grooved lumber dressed on both edges and on the face next to the concrete or three-fourths (¾) inch plywood panels unless otherwise shown on the Plans or specifically permitted by the Engineer. Forms for all other concrete work may be constructed with one (1) inch by six (6) inch tongue and grooved sheathing or one (1) inch ship-lap. Where shown on the drawings or required in these Detailed Specifications, or by the Engineer, forms for all exposed walls (both inside and outside) shall be constructed of three-fourths (¾) inch plywood which, in all cases, must be approved by the Engineer.

Moldings and the ornamentation shown on the Plans shall be formed with wood or metal molds. The width of all boards used for such work shall be approved by the Engineer.

d. Unlined Forms

Unlined forms may be used on unexposed surfaces of walls, slabs, columns, and beams unless otherwise specified herein or as shown on the Plans. Form boards shall not be re-used in contact with exposed surfaces unless they are thoroughly cleaned and oiled and approved by the Engineer.

e. Lined Forms

Where specified herein or where shown on the Plans, plywood panel or lined forms will be used for certain portions of concrete masonry structures. Where lined forms are used, the lining shall be of fiber board or plywood which must, in all cases, be approved by the Engineer. All lining materials shall be used in as wide pieces as a single width of fiber board. The lining material shall be nailed to the backing beginning at the center of the board and working toward the edges to prevent buckling. Cigar box nails or similar nails with flat heads shall be used to attach lining material to forms. The edges of the linings shall be butted tight together, and joints between the sheets shall be filled with a compound of litharge or Rutland Patching Plaster, or approved equal. Lining material may be re-used if it is satisfactorily cleaned and approved by the Engineer.

The smooth side of the lining materials shall be placed next to the concrete surface where smooth surfaces are specified; where granular surfaces are indicated or specified, the rough surfaces of the lining materials shall be placed next to the concrete.

f. Steel Forms

The use of steel forms may be used when approved in writing by the Engineer. Ties used with steel forms shall be of the type designed to remain permanently in place and conform to the requirements for form ties hereinafter. Steel forms, if used, shall be placed under the direction of a trained and competent representative of the supplier and the Contractor shall be totally responsible for their structural integrity.

g. Form Ties

Approved form ties shall be used for all wall construction. The ties shall be of the type that snap back in the wall, or permit removal of the tie ends. Ties shall be adjustable to permit tightening of forms, and of such type that will require a minimum amount of pointing with no metal closer than one-half (1/2) inch from face of wall. No ties will be permitted that require more than one and one-half (1½) inch for pointing. REMOVAL OR PULL-OUT TYPE TIES WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES. Form ties with three-fourths (3/4) inch wood concrete snap ties shall be as manufactured by the Universal Form Company of Chicago, Illinois, or approved equal.

h. Form Release Agents

All forms that are not restricted by the form manufacturer from application of a form release agent shall receive a volatile organic compound (VOC) compliant, non-staining, reactive, architectural application form release agent. The form release agent shall be applied in accordance with the manufacturer's instructions. Form release agents shall be Duogard as manufactured by W. R. Meadows or equal.

i. Removal of Forms

Forms shall not be removed until the concrete has attained a strength sufficient to support itself and the superimposed loads. Under normal curing conditions (average temperature 50°F or above) the forms may be removed after following minimum time has elapsed.

Floor slabs, beams, and girders	- 10 days
Columns, pedestals, and sections less than 12 inches thick	- 4 days
Wall lifts (12 inches thick) under 10 feet	- 2 days (48 hrs. min.)
Wall lifts (12 inches thick) over 10 feet	- 3 days (72 hrs. min.)

In cold weather forms shall not be removed from any work when the danger exists of freezing the concrete or otherwise damaging the surface. Whenever a question exists as to removal of forms, the forms shall not be removed until a standard cylinder cured on the site in a manner similar to the work represented has attained a compressive strength of 3,000 psi.

The use of the foregoing table shall in no way relieve the Contractor of its responsibility for the safety and integrity of the structure.

15. Floor Drains, Sleeves, and Inserts

The Contractor shall be responsible for placing all sleeves, floor drains (which shall be placed one (1) inch low and the floor sloped thereto), wall castings, step nosing, and other inserts in the concrete walls and floors in their proper positions. If for any reason said sleeves, wall castings, and/or other inserts are not delivered prior to pouring, the Contractor shall box out for same in a manner acceptable to the Engineer. It shall then become the responsibility of the Contractor to place same and make a watertight closure of the openings in a manner satisfactory to the Engineer.

16. Slabs on Grade

a. Subgrade Preparation

Subgrade shall be prepared and constructed in accordance with "Guide for Concrete Floor and Slab Construction", ACI 302.1R and as hereinafter stipulated.

The subgrade shall be compacted in the presence of the Engineer immediately prior to the fine grading operation. All soft or unstable material detected during the final compacting shall be cut out and the area reworked to provide the specified density.

After final compacting, a six inch (6") crushed stone base shall be constructed as required to obtain the specified slab thickness within a tolerance of plus or minus one-fourth inch (1/4"). All ruts and depressions shall be filled to eliminate any abrupt changes in slab thickness.

A SIX (6) MIL POLYETHYLENE VAPOR BARRIER MEETING THE REQUIREMENTS OF ASTM D 2103 SHALL BE PLACED OVER THE PREPARED CRUSHED STONE BASE PRIOR TO PLACING CONCRETE FOR THE SLAB.

b. Slab Placement

Materials and construction requirements relating to slabs on grade shall be in accordance with provisions outlined in this Section of the Specifications, in accordance with the "Guide for Concrete Floor and Slab Construction", ACI 302.1R and as hereinafter stipulated.

Slabs on grade which are not shown to pitch to drain shall be constructed to a uniform plane at the elevation shown on the Plans. Tolerance of dead-level slabs shall be plus or minus one-fourth inch ($\pm 1/4"$) in ten feet (10') (F_F22 and F_L22). Slabs at floor drains shall be finished with a four foot (4') diameter dish with center of dish one inch (1") below floor level.

Reinforcing steel shall be cut at isolation joints and expansion joints. Wire mesh reinforcement and bar reinforcement shall be placed as shown on the Plans.

Slabs shall be constructed in a strip pattern. The width of each strip shall coincide with the distance between column lines. Construction joints shall occur at the column lines in buildings.

Concrete shall be discharged as close to its final position as possible. Concrete shall be screeded with hollow metal straightedges, vibrating screeds or roller screeds. After initial screeding, low spots shall be filled with additional concrete placed by shovel and these areas shall be rescreeded. Screeding must be completed before any excess water or bleeding water is present on the surface of the concrete.

Immediately after screeding and before any excess moisture or bleeding water is present on the surface of the concrete, surfaces shall be bull floated with wood floats to eliminate ridges and fill in voids left by straight-edging operations.

Concrete shall be floated after it has stiffened to the point where foot pressure can be sustained with a maximum of one-fourth inch (1/4") indentation. Floating shall be performed, utilizing power floats or trowelling machines fitted with float shoes. Surfaces inaccessible to power driven machines shall be hand floated, utilizing wood, magnesium or aluminum hand floats.

c. Curing

(1) Interior Floor Slabs

Interior floor slabs shall be cured with a membrane curing compound designed to cure, seal, harden, and dustproof. This

compound shall be applied within one-half ($\frac{1}{2}$) hour after completion of finishing operations and/or immediately after disappearance of the "sheen" of surface moisture. Slab surfaces shall be uniformly coated at the rate recommended by the manufacturer. Application of material shall be by means of a roller or spray gun. If the floor slab is constructed prior to completion of the building envelope, floor surfaces shall be covered with curing sheets meeting the requirements of ASTM C 171. Sheets shall be securely anchored and maintained in place for a minimum of seven (7) days.

(2) Exterior Slabs and Water Holding Basin Floor Slabs

Exterior floor slabs, slabs on grade not requiring special coatings, and floor slabs of water holding basins shall be cured with a membrane curing compound designed to cure and seal. The curing and sealing compound shall be a hydrocarbon, resin-based compound meeting the requirements of ASTM C 309, Type 1, 1D, Class A and Class B. This compound shall be applied within one-half ($\frac{1}{2}$) hour after completion of finishing operations in accordance with the manufacturer's instructions. Slab surfaces shall be uniformly coated at the rate recommended by the manufacturer. Curing and sealing compound shall be CS-309-30 OTC by W. R. Meadows or equal.

As an alternative to use of membrane curing compound, the exterior slab may be completely covered with burlap and continuously soaked for ninety-six (96) hours after placing with a potable water sprinkler system.

17. Aluminum Safety Treads

The Contractor shall furnish and install on the leading edge of stairs, steps and landings nosings which shall be eight (8) inches less than the width of the surface to which said the nosing is attached (four [4] inches each side). The nosings shall be three (3) inches wide of the non-skid type equal to Wooster Products Type 101 alumogrip abrasive cast aluminum. Attachment shall be with concealed anchors on new work (for renovations use stainless steel screws). The installations shall be such that the top of nosing is flush with the top of the slab to which it is attached.

18. Concrete Finish

a. Floor Slabs

The concrete floors of all structures shall be finished monolithically with an allowable variation of one-eighth (1/8) inch in ten (10) feet transversely and longitudinally.

Concrete floor slabs on grade shall be placed over a well tamped and compacted subgrade. Form all recesses for thickened slabs, as shown on the Plans and thoroughly compact stone. Lay vapor barrier of six (6) mil (0.006 in.) thickness polyethylene over fill. Vapor barrier shall follow the contour of the thickness of the slab.

All floor drains shall be set one (1) inch lower than grade and the slab pitched thereto.

Slabs to receive quarry tile shall be finished by tamping the concrete with special tools to force the aggregate away from the surface; then screeded with straight edges and floated to produce a reasonably true and uniform surface.

b. Walls, Beams, Ceilings and Columns

(1) General

All concrete walls, ceilings, and beams shall be pointed; those which are to be exposed permanently to view, including the interior of basins to a point twelve (12) inches below the water line, shall be pointed and rubbed. If the surface is to be painted it shall be left smooth and all loose concrete rubbed away by use of a rough burlap sack or other effective method; if the surface is not to be painted it shall be rubbed as hereinafter specified. Foundation walls shall be rubbed to a point one (1) foot below grade on the outside. All projecting fins shall be removed from the concrete and holes left by form ties shall be pointed up.

(2) Pointing

After the specified curing times have elapsed, forms and form ties shall be removed and all depressions or imperfections inspected by the Engineer. After the Engineer has approved the general integrity of the work, all imperfections shall be wetted and repaired with non-shrink sand-cement mortar.

(3) Rubbing

After pointing has set, all surfaces requiring rubbing shall be kept wetted with water with a brush and rubbed with a No. 20 carborundum stone. The rubbing shall be continued sufficiently long to remove all marks and projections, producing a smooth, even surface without marked irregularities. The final rubbing shall be done with a No. 40 carborundum stone and continued until the entire surface is of smooth texture. After the rubbing has been finished, all excess particles shall be removed by brushing the surface with burlap. The finished surface shall be uniform in color and otherwise satisfactory to the Engineer.

(4) Coating

IF APPROVED by the Engineer in lieu of rubbing concrete, all structural cast-in-place concrete foundations, walls, beams, columns, roofs, ceiling and equipment foundations exposed to view and not identified or depicted on the accompanying Plans to receive any other finish or treatment, including the interior of all water holding structures to an elevation twelve inches (12") below the minimum normal water level and exposed exterior concrete walls to an elevation twelve inches (12") below finished grade, shall be coated as described hereinafter.

The coating shall be MasterSeal 584 or equal combined with water and MasterEmaco A660 or equal, both manufactured by Master Builders Solutions, or approved equal, in the proportions recommended by the product manufacturer for a trowel finish coating approximately one-eighth inch (1/8") to one-fourth inch (1/4") thick. The coating shall be applied according to the manufacturer's printed instructions including a "key coat" cured five (5) to seven (7) days followed by a final coat applied with a steel trowel and finished with a sponge float. All concrete coating described in this Paragraph shall be applied with a trowel finish, except that the coating to the underside of overhanging walkways may be applied with a brush finish. Application by spraying will not be allowed. All products used shall be those manufactured by Harris Specialty Chemicals, Inc., or approved equal.

The color shall be selected by the Owner.

c. Exterior Slabs

All walks, platforms, and exterior floors or slabwork shall have a broomed finish. After screeding to the required grade while the concrete is still

green, but has hardened sufficiently to bear the finisher's weight the surface shall be floated with a wood float to a true and even plane with no coarse aggregate visible. The slab shall then be evenly broomed with all strokes parallel to leave a workmanlike skid resistant finish.

d. Chamfer

All exposed edges shall be chamfered three-fourths (3/4) inch unless otherwise noted.

19. Watertightness

a. General

The Contractor is required to make watertight concrete in all structures holding water or solutions or dry wells or basements. All cracks and imperfections developing at any point in the work shall be thoroughly repaired in a manner satisfactory to the Engineer. When the concrete work has attained sufficient strength, the Contractor shall fill each basin or tank, or each compartment, with water, and shall repair any imperfections which cause the water level to fall more than one-half inch ($\frac{1}{2}$ ") in twenty-four (24) hours. All noticeable leaks in any portion of the work shall be repaired in any case, even if the preceding requirements as to watertightness are satisfied. THE CONTRACTOR MAY CONDUCT THIS WATERTIGHTNESS TEST EITHER BEFORE OR AFTER BACKFILLING EXTERIOR WALLS.

It is expected that with the proper precautions, a dense watertight concrete will be obtained. If concrete which passes the above requirements for watertightness has not been obtained, the Contractor shall, under the direction of the Engineer, furnish all materials and do all work necessary to produce watertight concrete structures.

All treatment of concrete necessary to fulfill these requirements for watertightness shall be done at the Contractor's own expense.

b. Dampproofing

The outer surface of all exterior concrete walls enclosing dry spaces (e.g. pits or structures housing equipment, valves or instruments) that is to be covered by backfill or by brick or decorative block shall be coated with an emulsion type asphalt dampproofing prior to backfilling or laying of brick. The dampproofing shall conform to ASTM D 1227, Type 4 for brush-on application to concrete surfaces. Concrete structures containing water or wastewater do not require dampproofing.

Surfaces to receive dampproofing shall be clean and dry before application of dampproofing. Surfaces shall be primed in accordance with the manufacturer's recommendation. The dampproofing shall be applied uniformly at a rate of not less than thirty (30) pounds per one hundred (100) square feet.

Dampproofing shall be protected from damage until brick or decorative block is laid or backfill is placed. Concrete walls exposed to view after completion of construction shall not be waterproofed.

20. Defective Concrete

Concrete shall be so placed, compacted, finished and cured so as to form a dense, compact, impervious artificial stone with smooth exposed faces. Any part of the work found to be honeycombed, porous, or otherwise defective in the opinion of the Engineer shall be removed or replaced in whole or in part at the expense of the Contractor.

21. Testing of Concrete

In general, Section 2. Testing and Control of Materials of these Detailed Specifications, governs all testing.

The following tests and/or samples shall be taken in the field as work progresses:

a. Standard Slump Tests

Field slump tests shall be made by the Contractor, using an accurately made sheet iron test cone, in accordance with the provision of ASTM C 143. At least one (1) slump test shall be made for each truck; the Engineer may require additional tests if he deems it necessary to insure the desired consistency of the concrete.

b. Concrete Compression Samples

During the progress of the work and for each different mix of concrete, test cylinders shall be made from each day's pour with a minimum of one (1) for each twenty-five (25) cubic yards or a maximum of one (1) from each batch or readymix truck load. The maximum requirement will be imposed only when the Engineer deems necessary due to wide fluctuations in the concrete quality. A minimum of three (3) cylinders will be required for each day's pour if the concrete is used in structures or otherwise in a load carrying capacity. Sidewalks, manholes, etc., may require only one (1) cylinder if less than twenty-five (25) cubic yards per day is placed, and the quality remains sufficiently high in the opinion of the Engineer.

Each cylinder shall be numbered and logged so as to adequately identify the location of the representative concrete in the structure.

The following "break" schedule for cylinders from the same pour will be used:

- | | |
|--|---|
| Where only one (1) cylinder is made | - 28 days |
| Where two (2) cylinders are made | - one at 7 days
- one at 28 days |
| Where three (3) cylinders are made | - one at 7 days
- one at 14 days
- one at 28 days |
| Where four (4) cylinders are made | - one at 7 days
- one at 14 days
- one at 28 days
- one reserved |
| Where over four (4) cylinders are made | - Same as four plus
reserve or as directed |

ASTM C 31 shall govern with curing as required. The testing shall be done per ASTM C 39.

22. Reinforcing Steel

a. General

Bar reinforcement and wire mesh reinforcement shall be furnished and tested in accordance with Section 2. Testing and Control of Materials. CERTIFIED MILL TEST REPORTS SHALL ALSO BE FURNISHED TOGETHER WITH AN AFFIDAVIT INDICATING THE ORIGIN.

b. Bar Reinforcement

Reinforcing steel shall conform to the requirements of ASTM A 615 new billet steel, Grade 60, with deformations conforming with ASTM A 615. An affidavit showing the heat numbers and origin shall be furnished.

All bars shall be lapped a minimum of thirty (30) diameters at splices unless a greater lap is shown on the Plans.

All detailing, fabrication, and erection of reinforcing bars, unless otherwise noted, shall be in accordance with the ACI "Manual of Standard Practice for Details and Guide to Presenting Reinforcing Steel Design Details" (ACI 315).

The Contractor shall furnish the Engineer with five (5) copies of shop drawings of reinforcing bars, and schedules showing all bends and special bars. These shop drawings and schedules must have the approval of the Engineer before shipment is made. The bars shall bear a designation on the drawings and in the schedule and shall be tagged with metal tags for identification. The Engineer's representative shall be afforded free access to the fabricating shops.

c. Wire Mesh Reinforcement

Wire mesh reinforcement shall conform to the requirements of ASTM A 1064.

d. Openings

Openings twelve (12) inches and larger through concrete walls and slabs shall have a minimum of four (4) extra diagonal bars in each face of the wall or slab of the same size as the largest bar in the wall or slab. The length of extra diagonal bars at openings shall engage a minimum of forty (40) bar diameters each side of the opening unless space requires full bond to be developed by means of hooks.

e. Minimum Reinforcing Steel

If through an omission Class "A" concrete walls, slabs, and other concrete work are shown on the Plans to have no reinforcing, a minimum area of steel reinforcing equal to 0.0018 times the cross-sectional area of the concrete work shall be provided.

f. Storage and Protection

Steel reinforcement, either bars or mesh, shall be new stock free from rust scale and shall be stored above the surface of the ground upon platforms, skids, or other supports and protected from the weather. When placed in the work it shall be free from rust, dirt, scale, paint, oil, or other foreign matter which may reduce or destroy bond. A thin coating of red rust resulting from short exposures will not be considered objectionable when bars are placed in the work; but any bars having rust scale or a thick rust coat shall be thoroughly cleaned to the satisfaction of the Engineer, or shall be rejected and removed from the premises if ordered by the Engineer.

g. Placing and Fastening of Reinforcement and Inspection Thereof

Steel reinforcement shall be placed in the exact position as shown on the Plans and held securely in place during the placing of the concrete. All

reinforcement shall be wired together at intersections or as directed by the Engineer. Sheet metal or welded wire bar spacers shall be used for bars in all steps, walls, and beams. Chairs, or approved equal, shall be provided for the support of reinforcement of slabs and flat surfaces. When the reinforcement is placed in the work, it shall have a clean, fresh surface, free from dirt, scaly rust, mill scale, paint, oil or other foreign substances.

BEFORE ANY CONCRETE IS PLACED, THE ENGINEER SHALL HAVE EXAMINED THE PLACING OF THE STEEL REINFORCEMENT AND GIVEN PERMISSION TO DEPOSIT THE CONCRETE. CONCRETE PLACED IN VIOLATION OF THIS PROVISION MAY BE REJECTED AND THEREUPON SHALL BE REMOVED.

23. Concrete Repair Material

Where the repair of existing Portland cement concrete is noted on the accompanying Plans, the following procedures and materials shall be utilized to perform the repair.

All surfaces to be repaired shall be prepared as necessary to make them clean and structurally sound. The surface shall be cleaned by chipping, acid-etching, sandblasting and/or shot-blast cleaning methods to remove all dust, grease, paint, sealers and other foreign materials from the Portland cement concrete surface to be repaired. If acid-etching is used, the surface to be repaired shall be neutralized using a caustic solution and brushed prior to performing the repair. The Portland cement concrete surface to be repaired shall be kept damp for thirty (30) minutes prior to beginning the repair work but standing water shall not be allowed on the surface to be repaired.

The repair material shall be a two (2) component acrylic polymer modified concrete repair material. The material shall be mixed and applied in strict accordance with the manufacturer's written instructions. The concrete repair material shall be Patchcrete® manufactured by Lyons Manufacturing, Inc. or equal.

SECTION 4

RENOVATION OF GRAVITY SEWERS BY OPEN-CUT METHODS, MANHOLE REPLACEMENTS, AND APPURTENANCES

1. Scope

The work described under this Section of the Detailed Specifications consists of the furnishing of all labor, materials, equipment and services necessary for the renovation of existing sanitary sewer lines and manholes, as indicated on the Plans and specified herein using open-cut methods.

2. Bypass Pumping

See Section 1, General Scope and Special Provisions, Paragraph 5. Bypass Pumping.

3. Pipe Materials for Sanitary Sewers

a. General

Sanitary sewer lines shall be SDR 26 Polyvinyl Chloride (PVC) pipe or specially lined Class 350 Ductile Iron Pipe (DIP) as shown on the Plans.

b. Polyvinyl Chloride Pipe

(1) Materials, Manufacture and Fittings

Polyvinyl chloride pipe for sewer lines shall be made from Class 12454-B or 12454-C Polyvinyl Chloride plastic as defined in the latest revision of ASTM D1784, "Rigid Poly(Vinyl Chloride) (PVC) Compounds". Main sanitary sewer line pipe and sewer service pipe shall be SDR-26. Polyvinyl chloride (PVC) pipe and fittings 15 inches and smaller shall meet and/or exceed all of the requirements of ASTM D3034 latest revision, type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings as it applies to Class 12454-B or 12454-C Polyvinyl Chloride plastic pipe. Sanitary sewer pipe larger than 15 inches shall meet the requirements of ASTM F679 Poly(Vinyl Chloride) (PVC) large diameter plastic gravity sewer pipe and fittings, latest revision. The bell shall consist of an integral wall section with solid cross section rubber ring factory assembled and securely locked in place to prevent displacement or designed for positioning a single rubber gasket ring in an annular recess or socket. Push-on joints shall form a watertight seal and lubricants shall be non-toxic and compatible with the gasket and pipe material.

Joints and lubricants shall conform to the latest revision of ASTM D3212, latest revision. Gaskets shall be vulcanized natural or vulcanized synthetic rubber conforming to the latest revision of ASTM F477, latest revision. Standard lengths shall be 20 feet and 12.5 feet ± one inch. All fittings and accessories shall have bell and spigot configuration identical to that of the pipe. Minimum "pipe stiffness" (F/Y) at 5 percent deflection shall be 46 or higher for all sizes when tested in accordance with ASTM D2412, latest revision.

(2) PVC Pipe Bedding and Backfill

See Paragraph 7. Pipe Bedding for Sanitary Sewers.

(3) PVC Pipe Testing

Testing shall be performed in accordance with Section 2, Paragraph 18 of these Detailed Specifications. Certified test reports shall be submitted for approval.

(4) Markings

Each length of pipe and fittings shall have the following information plainly marked on the pipe's exterior:

- (a) Nominal Size
- (b) Type of Material
- (c) SDR or Class (Color Coded)
- (d) Manufacturer
- (e) Independent Testing Laboratory Stamp
- (f) Quality Control Code

c. Ductile Iron Pipe

(1) Materials, Manufacture and Joints

Ductile iron pipe shall be centrifugally cast, manufactured and tested in accordance with the ANSI/AWWA Standard C150/A21.50-02 for Ductile Cast Iron, Grade 60-42-10. The nominal wall thickness for each pipe size and Pressure Class shall be as follows:

<u>Size</u>	<u>Pressure Class</u>	<u>Wall Thickness (Inches)</u>
6-inch	350	0.25
8-inch	350	0.25
10-inch	350	0.26

The pipe shall be manufactured and tested in accordance with the requirements of ANSI Specification A21.51.

Pipe shall be push-on type joint incorporating a single molded rubber ring gasket unless otherwise indicated and shall be furnished tar coated outside and the manufacturer's standard cement lined inside to comply with ANSI Specification A21.4.

(2) Joint Lengths and Joint Deflection

Standard joint length shall be 20 feet; however, shorter lengths may be used in order to achieve the alignment or grade required. The maximum allowable joint deflection for DIP pipe is 5 degrees (21 inches per 20-foot length, regardless of the layout shown on the Plans); in order to achieve the alignment or grade, shorter lengths or extra fittings will be required. The maximum joint deflection will be strictly enforced. Bending of the pipe will not be allowed.

(3) Ductile Iron Pipe and Fittings with Special Lining

All ductile iron piping shall be Class 350 Ductile Iron Pipe with a special corrosion resistant lining as specified herein.

All specially lined pipe requires special handling from the outside of the pipe with straps or chains. No forks or hooks shall be used inside the pipe after the lining is applied. Field unloading shall be carefully performed, likewise, stenciled notations (at least 4 per pipe joint and 2 per fitting) shall note these handling limitations.

This specification allows U.S. Pipe Class 350 with Polythane® lining, American Class 350 pipe with Induron Protecto 401™ ceramic epoxy lining, Novalex epoxy or pre-approved equal.

Induron Protecto 401™ ceramic epoxy shall be an amine cured Novalec epoxy containing at least 20 percent by volume ceramic quartz pigment. Coupons from factory lined DIP shall undergo the following tests:

- ASTM B117 Salt spray (scribed panel)
- ASTM G95 Cathodic Disbondment (1.5 volts @ 77°F) maximum 0.5 mm undercutting after 30 days.

- ASTM D714 Inversion Testing
 - 20 percent sulfuric acid - no effect two years
 - 140°F - 25 percent sodium hydroxide - no effect two years
 - 160°F - distilled water - no effect two years
 - 120°F - tap water - no effect two years
- Abrasion resistance - less than 4 mils loss after one million cycles on a ± 22.5 sliding aggregate slurry tester using sharp natural siliceous aggregate 2 mm to 10 mm.

Surfaces to be lined with Protecto 401™ or pre-approved equal shall be cleaned of oil and grease with a solvent using the guidelines for DIPRA-1 solvent cleaning and then abrasive blasted to remove rust and loose oxides and the lining applied within 8 hours. If rust reappears, reblast the rusted area.

The lining shall cover the inside surface of the pipe and fittings from the spigot end to the gasket socket. The coating in pipe and in fittings shall be 40 mils nominal thickness. Minimum lining thickness shall be 30 mils. Coating thickness on sealing areas in the bell socket and on the spigot may be decreased to 10 mils.

Thickness determinations using a TYPE 1 magnetic thickness gauge shall be conducted in accordance with Steel Structures Painting Council SSPC-PA2 Specification as applied to ductile iron pipe and fittings.

Holiday inspection as per ASTM G62 Method B shall be conducted using a 2000 volt spark test. In accordance with the coating manufacturer's recommendation, holiday testing may be conducted any time after the coating has reached sufficient cure.

(4) Procedures for Sealing Cut Ends and Preparing Field-damaged Areas of Specially Lined Pipe and Fittings

- (a) Remove burrs caused by field cutting of ends or handling damage and smooth out edge of the lining if it is rough and remove loose liner.
- (b) Remove all traces of oil, grease, dust, dirt, etc.
- (c) With the area to be repaired absolutely clean and suitably roughened, apply a coat of Protecto Joint Compound or pre-approved equal using the following procedure:

Protecto Joint Compound or pre-approved equal is a 7 to 1 (7:1) mix ratio. When mixed, it should contain seven parts of the black activator and one part of the translucent blending resin. This can be accomplished by using the same container to dip out seven containers from the large can and pouring one contained from the small can which contains the resin. This is the simplest and most accurate means for field mixing less than the kit provided. After the blending resin is added to the activator, the mixture should be thoroughly agitated. All activated material must be used within 45 minutes of mixing.

After the material has been thoroughly mixed in a 7 to 1 (7:1) ratio, it can be applied to the prepared surface by brush. Brushing is best due to the fact that the areas to be repaired are usually small. Practices conducive to a good coating are contained in the technical data sheet for Protecto Joint Compound.

(5) Pipe Bedding and Backfill

See Paragraphs 7 and 10 of this Section of these Detailed Specifications.

(6) Testing

See Paragraph 19 of Section 2 of these Detailed Specifications.

(7) Markings

Each length of pipe and fittings shall have the following information plainly marked on the pipe's exterior:

- a. Nominal Size
- b. Class
- c. Manufacturer
- d. Independent Testing Laboratory Stamp
- e. Quality Control Code
- f. NSF (National Sanitation Foundation) Standard 61 Stamp Seal of Approval

(8) Restrained Joint Pipe

Ductile iron pipe with restrained joints shall be Class 350 and conform to the latest revisions of ANSI Specification A21.10, A21.11 and A21.51. The pipe shall be installed where shown on

the Plans or directed by the Engineer and shall utilize American Fast Grip gaskets or pre-approved equal.

4. On-Site Inspection of Pipeline Materials

Before allowing any pipe or fittings to be paid for as "stored materials" the Engineer shall be afforded the opportunity to inspect and mark it on-site.

The inspection shall consist of a visual inspection for obvious cracks, improper markings or other defects and a dimensional inspection. The Contractor(s) shall furnish templates or other means of ascertaining the compliance of the pipe to the dimensional allowances in the governing specifications.

Rejected pipe or fittings will be painted with an orange or red "X" and the date. Such rejected materials shall be immediately segregated from acceptable pipe and shall be removed from the project within 14 days.

5. Shoring, Sheet piling and Bracing of Excavations

It is the sole responsibility of the Contractor(s) to determine sheet piling, shoring and bracing of excavations and such work is NOT a separate pay item.

In some cases, a note on the Plans indicates shoring and sheet piling is required; where this occurs, the cost of same shall be merged into the cost of the pipeline (no extra payment).

6. Excavation for Open-Cut Replacement of Sewers and Manholes

a. General

The excavation shall be carried to the depths indicated on the Plans and/or directed by the Engineer to permit proper bedding of the replacement pipe. The Contractor shall be responsible for the removal and disposal of the existing gravity sewer pipe. The Contractor(s), at his own expense, shall provide adequate facilities for promptly removing water from all excavations.

Unless otherwise indicated, trenches shall be excavated by open cut methods. Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling. Unless specifically authorized by the Engineer, trenches shall not be excavated wider than 18 inches plus the outside diameter of the pipe, at the level of the crown of the pipe.

All barricades and other such signs and signals as may be necessary to warn the public of the dangers in connection with open trenches,

excavations and other obstructions shall be provided by and at the expense of the Contractor(s).

The trench shall be straight and uniform so as to permit laying pipe to the proper lines and grades.

When so required, by the Owner through the Engineer, one-half of the street crossings and road crossings shall be excavated, then temporary bridges consisting of ½-inch steel plate, unless calculations indicate a thicker plate should be used, shall be placed over the side excavated for the convenience of the traveling public; then the remainder of the excavation shall be carried out. All backfilled ditches shall be maintained in such a manner that they offer minimal hazard to the passage of traffic. The convenience of the traveling public and the property owners abutting the improvements shall be taken into consideration. All public or private drives shall be promptly backfilled or bridged.

In excavation for masonry and concrete structures including manholes, the required width shall be such as to permit forms to be constructed in the proper manner and to permit proper backfilling upon completion of the structures. Depth of excavation for footings shall be as shown on the Plans and/or as directed by the Engineer to obtain sufficient bearing.

All excavated material not needed for backfilling purposes shall be disposed of in a manner satisfactory to the Owner.

In all areas along highways or roadways where the pipeline is being laid in the pavement or in the right-of-way of the road, excavation during each day shall be limited to the footage of pipe that can be laid and the trench be backfilled so that minimal ditch is left open overnight in such areas.

All excavation shall be accomplished in accordance with applicable safety laws and regulations; the Engineer, as previously stated, does not assume responsibility of any degree or sort for acts of the Contractor(s).

b. Unstable Trench Bottom Material or Undercutting

If wet, mucky and/or unstable or unsuitable material is encountered in a trench bottom, the Engineer may require additional excavation to ensure a firm foundation for the pipe. The quantity of undercutting will be determined by the actual ditch width or a maximum of the diameter of the pipe plus 18 inches, multiplied by the difference between the depth of ditch ordered and 6 inches below the invert elevation of the pipe. In such cases, the trench bottom shall be brought back up to proper grade with bedding material as provided herein. Crushed stone (TDOT No. 67) refill required shall be paid for at the unit price per cubic yard set forth in the BID FORM,

including all excavation, if such excavation and refill is directed by the Engineer. If the Contractor(s) has caused the extra work due to failure to properly dewater the ditch, no payment will be made.

The Engineer shall determine when it is necessary to use such material and the Contractor(s) shall be responsible for calling such unstable trench bottom conditions to the attention of the Engineer.

c. Excavation Near Potable Water Lines

The Contractor shall protect water lines that cross the sewer lines by providing 18-inch minimum separation between the top of the sewer line and the bottom of the water line. When this vertical separation cannot be achieved, the water line shall be relocated to provide this separation or reconstructed with Class 51 ductile iron pipe with one full length of water pipe being centered over the sewer line so that both joints will be as far from the sewer line as possible.

When sewer lines are being laid parallel to water lines, there should be a minimum of 10 feet horizontal separation, or a minimum of 18 inches vertical separation as specified above.

d. Removal of Water

The Contractor(s) shall at all times during construction provide and maintain means and devices with which to promptly dispose of all water entering the excavations or other parts of the work and shall keep said excavations dry until the structures to be built therein are completed. No concrete shall be placed in water nor shall water be allowed to rise over structures if there is danger of flotation or of setting up unequal pressures in the concrete, until the concrete has set at least 24 hours and any danger of flotation has been removed.

The Contractor(s) shall dispose of water from the work in a suitable manner without damage to adjacent property or water lines. No water shall be drained into work built or under construction.

During the laying of lines and until the water line has been bedded in place with at least 2 feet of backfill over the pipe, the Contractor(s) shall keep the groundwater table below the bottom of the trench.

No lines will be permitted to be laid except in a dry trench. Running water shall be completely blocked off by dewatering and/or sheathing. The trench must be dry and clean to assure that the hub and spigot of the pipe are perfectly dry before a joint is made.

All removal and handling of water required to maintain dry trenches or other excavations for the construction of lines or other structures in the dry trench shall be at the expense of the Contractor(s).

7. Pipe Bedding for Sanitary Sewers

a. General

All sanitary sewers shall be laid on a bed of crushed stone meeting the requirements of TDOT No. 67 to depths as shown on the Plans. In general, the trench shall be opened below the bottom of the pipe and refilled with the bedding materials to a depth sufficient to provide a firm bed for the bottom quadrant of the pipe at the proper line and grade.

When rock is encountered, the trench shall be excavated to a depth at least 6 inches below the invert of the pipe and refilled with the bedding material to a sufficient depth to provide a firm bed for the bottom quadrant of the pipe. Bedding material for pipe laid in suitable earth or in rock is NOT a separate pay item.

If wet, mucky and/or unstable or unsuitable material is encountered in the trench bottom, it shall be excavated and backfilled as specified hereinbefore under Paragraph 6.b. Unstable Trench Bottom Material or Undercutting.

Material as specified hereinbefore for the type of pipe employed shall be brought up evenly along each side of the pipeline and tamped so as to secure the line and grade of the pipeline and to prevent damage thereto.

b. Bedding and Backfill Protection for Polyvinyl Chloride Sanitary Sewer Line

A crushed stone envelope using TDOT No. 67 shall be installed to a point above the pipe as shown on the Plans. In addition to the construction procedures outlined in other paragraphs of this Section of the Specifications, PVC pipe shall be installed in full compliance with the latest revision of recommended practice for "Underground Installation of Flexible Thermoplastic Sewer Pipe", ASTM D2321. The Engineer may require periodic compaction tests to ensure proper density of the compacted backfill according to this Section of the Specifications and according to Section 9 of ASTM D2321.

8. Pipe Laying for Sanitary Sewers

a. General

The trench shall be excavated to the required depth and width and bell holes dug in the bedding in advance of pipe laying.

The laying of sanitary sewer pipes in finished trenches shall be commenced at the lowest point so that the spigot ends point in the direction of the flow. All pipes shall be laid with ends abutting and true to the line and grade indicated on the Plans or as directed by the Engineer. They shall be fitted and matched so that when laid in the work they will form a sewer with a smooth and uniform invert. Supporting of pipes shall be as set out hereinbefore at Paragraph 7. Pipe Bedding for Sanitary Sewers and in no case will the supporting of pipes on blocks or earth mounds be permitted.

Branches, fittings and specials for sewer lines shall be provided and laid as and where directed by the Engineer or shown on the Plans. All open ends of the pipe and of branches shall be sealed with stoppers or bulkheads firmly held in place so as to be watertight and easily removable.

Open ends of unfinished pipelines shall be securely plugged or closed at the end of each day's work or when the line is left temporarily at any other time. PROPER PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR(S) TO PROTECT THE PIPELINE FROM FLOTATION.

b. Polyvinyl Chloride Pipe

Care is required in the storing and laying of PVC pipe.

Pipe shall be stored in strict accordance with the manufacturer's recommendations; it shall be shielded from direct sunlight and uniformly supported. The manufacturer shall furnish five (5) copies of printed instructions to the Engineer. PVC PIPE THAT HAS BOWED SHALL NOT BE LAID; IF IT CANNOT BE STRAIGHTENED SO THAT IT LAYS FLAT ($\pm 1/8$ INCH) WITHOUT RESTRAINT, THE PIPE WILL BE REJECTED AND SHALL BE REMOVED FROM THE JOB SITE.

PVC pipe shall pass, after it is laid and backfilled, a vertical floating pin type go/no-go mandrel or effective equivalent sized to 95 percent of the actual pipe diameter.

Care is required to prevent piercing or deforming PVC pipe. PVC pipe requires careful attention to the bedding operation in order to prevent

misalignment and sags due to either uneven bedding or uneven side pressure.

9. Manhole Replacement or Addition of Manhole to Existing Sewer

a. General

At locations shown on the Plans or identified by the Engineer, the Contractor shall install new manholes or replace existing manholes.

Generally, manholes to be installed on gravity sewer pipelines with a diameter equal to or less than 18 inches shall be 4'-0" diameter manholes.

b. Precast Concrete Manholes

Precast manholes shall be constructed on a reinforced concrete foundation and shall be wet or dry cast as modified herein. The bottom section of the manhole shall be precast integrally with the precast ring and shall be the diameter shown on the Plans. All concrete used in connection with the construction of manholes shall be Class "A" concrete as specified in Section 3 of these Detailed Specifications. Wet cast precast manholes shall be Forterra or pre-approved equal.

Precast concrete rings shall be constructed using standard forms and shall conform to ASTM C478-84a except that:

- (1) The concrete mixture shall contain no less than 846 pounds per cubic yard (9.0 bag mix) of Portland Cement.
- (2) An eccentric top core will be allowed provided it meets these Detailed Specifications.
- (3) All joints shall conform to Section 8 of ASTM C361; except the Contractor(s) shall utilize a double seal of Ram-Neck as shown on the Plans.
- (4) Xypex Admix C-1000 or pre-approved equal shall be incorporated into all precast manholes.

The precast sections shall be manufactured and installed in a manner so that there is no visible leakage in the manholes. The manhole sections shall be manufactured in lengths such that a finished manhole will have the least possible number of joints. One section less than four feet in length will be allowed per manhole and that being the section required to bring the manhole to grade. NO HOLES FOR LIFTING WILL BE ALLOWED. The precast rings shall be of the tongue and groove design

sealed watertight, and the joint shall be grouted smooth on the inside and outside of the manhole so that no crack is visible.

The outside surface of all precast sanitary sewer manholes shall be coated with two layers of bitumastic coating applied at right angles to each other.

c. Adjustment Ring Inflow and Infiltration Barrier

The inflow and infiltration barrier shall be single continuous rubber band made of EPDM rubber with a minimum thickness of 65 mils. Each band shall have a 2" x 1/4" mastic strip on the top and bottom edge. The mastic shall be non-hardening butyl rubber sealant and shall seal to the cone/top slab of the manhole/catch basin and over the lip of the casing.

The inflow and infiltration barrier shall be installed after the adjusting rings are set and shall be installed in accordance with the manufacturer's recommendations. The inflow and infiltration barrier shall be manufactured by Sealing Systems, Inc. or approved equal.

d. Connection of Sewer Line to Manhole

The connection of the manhole to the pipeline(s) shall be accomplished as follows:

<u>Type of Pipe</u>	<u>Type of Manhole</u> <u>Precast</u>
DIP	A-lok, Kor-N-Seal or pre-approved equal
PVC	A-lok, Kor-N-Seal or pre-approved equal

The A-lok or pre-approved equal gasket for use with precast manholes shall be a neoprene gasket cast into the manhole wall and providing the manufacturer's recommended pipe deflection while maintaining a watertight seal. The Kor-N-Seal or pre-approved equal connection shall consist of a neoprene boot with an internal expanding opening and stainless steel band and clamp.

Where main lines enter the manhole two (2) feet or more above the invert a drop shall be installed. Drop connections shall be made of flanged or mechanical joint cast iron or ductile iron pipe as specified herein.

An actual sample of the proposed pipe section with the water stop welded thereon shall be submitted for the Engineer's consideration. The same installation procedures described for the cast iron wall pipe above shall be used except that no adaptor will be required to connect the similar pipeline material.

e. Standard Manhole Frames and Covers

Manhole frames shall be furnished and set in a bed of mastic and BOLTED to the concrete as shown on the Plans. The standard frame and cover shall be traffic type of grey cast iron ASTM A48 with a 24-inch diameter opening weighing not less than 400 pounds as shown on the Plans. The covers shall be the solid self-sealing type with no holes except watertight pick notches or a heavy lifting ring. The surface between the cover and frame shall fit smoothly without rocking and shall be thoroughly cleaned. Special attention shall be given to ensure the proper installation of the rubber gasket in the self-sealing cover. The gasket shall have at least 1/4-inch diameter cross-section. The frame shall be attached to the manhole barrel by means of four 5/8-inch anchor bolts and shall be set in a bed of mastic so as to constitute a watertight seal between the barrel and the frame.

An actual sample manhole frame and cover may be required shipped prepaid to the Engineer at his Nashville office for testing on the Engineer's testing apparatus along with shop drawings. The frame and cover shall leak at a rate of 2 gpm or less when submerged by 2 inches of water. The Engineer may make one or more random on job selections of further manhole frames and covers to be tested, all of which will be returned to the Contractor(s).

f. Manhole Inverts

Manhole inverts shall be formed from Class "C" concrete as shown on the Plans. Curved inverts shall be constructed of concrete and shall form a smooth, even, half-pipe section as shown on the Plans. The inverts shall be constructed when the manhole is being built.

g. Manhole Steps

Manhole steps shall be made of copolymer polypropylene plastic meeting the latest revision of ASTM D2146 latest revision, Type II Grade 16906 and shall have a 1/2-inch diameter Grade 60 reinforcing rod meeting the latest revision of ASTM A615 through its center. Each step shall be 12 inches in width and capable of carrying a load of 1,000 pounds in the center of the step when projected 6 inches from the wall. Each step shall be equipped with non-skid grooves.

10. Backfilling Excavations

a. General

All pipelines shall be backfilled to a level twelve (12) inches above the top of the pipe with crushed stone meeting the quality requirements of TDOT No. 67 crushed stone.

In the backfilling of the excavation in non-paved areas above the initial crushed stone backfill zone, native soil reasonably free from rock and acceptable to the Engineer shall be used. Walking or working on the completed pipeline, except as may be necessary in tamping or backfilling, shall not be permitted until the excavation has been backfilled to a height of at least 12-inches above the top of the pipe. The filling of the excavation shall be carried on in such a manner that the completed pipeline will not be disturbed and injurious side pressures do not occur.

In filling the remainder of the excavation in non-paved areas, the backfill material may be placed into the excavation without compacting, and heaped over whenever, in the opinion of the Engineer, this method of backfilling may be used without inconvenience to the public.

Where backfill material has been piled up and before final acceptance, the Contractor will be required to level off all backfilled excavations to the level of the surrounding street, roadway, or terrain. The Contractor will be required to remove from the streets, roadways, and private property all excess earth or other materials.

b. Final Backfilling Operations Conducted on Easements

Final backfilling of excavations on easements shall be performed in such a manner that the private property owner's facilities and grounds shall be restored to as near as possible their original condition immediately after pipe laying.

The residue from the excavation shall be cleaned up and placed into the trench, leaving no residue scattered over the area. The top portion of the excavation shall be filled using topsoil. The backfill shall be left high to allow for settling unless in the opinion of the Engineer this method of final backfilling will cause inconvenience to the private property owner. Seeding or sodding shall proceed immediately following backfill.

If the final backfilling operation is performed during extremely dry weather, the Contractor should leave some stockpiled topsoil to use later as additional fill after settlement has occurred.

The Contractor will be held responsible for the condition of grass cover and the condition of the ground surface at the time of final inspection unless the private property owner has plowed or excavated the ground.

c. Final Backfilling Under Paved Areas

Crushed stone backfill meeting the quality requirements and the gradation requirements for TDOT No. 67 shall be used for all final backfill of excavations under existing or proposed paved areas. The crushed stone backfill shall be mechanically tamped in 6-inch layers. Base and paving shall be replaced as specified in Paragraph 13. Replacing Streets and Roadways of this Section of these Detailed Specifications.

11. Testing Sanitary Sewer Manholes

The Contractor shall vacuum test all new manholes installed on sanitary sewers to at least 10 inches of mercury. The test shall be considered acceptable if the vacuum remains at 10 inches of mercury or drops to no less than 9 inches of mercury within one (1) minute. The test shall be conducted with the frame secured to the manhole as shown on the Plans and specified hereinbefore.

If the manhole fails the initial test, the Contractor shall locate the leak(s) and make the appropriate repairs, acceptable to the Engineer in preparation for additional tests.

The Contractor shall furnish all equipment necessary for this test and the cost of this work shall be merged into the unit price for manholes.

12. Leakage Testing of New Gravity Sewer Lines (Does Not Apply to Point Repairs)

a. General

Prior to final acceptance of completed gravity sewer lines, the lines will be inspected or shall be tested to ensure compliance with the following provisions (it should be recognized that much of the prescribed should be done prior to backfilling).

b. Allowable Pipeline Leakage

Generally, the Contractor will be required to lay sewer lines so that the groundwater infiltration shall not average more than 25 gallons per 24 hours per inch of nominal diameter per mile of sewer, including manholes and plugged services and as measured in a high groundwater condition approximately at the surface of the ground. These requirements may be applied to the entire system or may be applied to any single section of line

between two manholes. The more restrictive provisions set forth for specific items shall govern those items.

In order to test for infiltration/inflow, the Engineer will require that the Contractor plug the open ends of all lines at a manhole so that measurements may be made at each section of the sewer line. Temporary pumps may also be required. The Contractor will be expected to locate and repair leaks even if the location of same requires T.V. inspection. Grouting of leaks with 3M elastomeric grout will be permitted as a last resort.

Manholes or flexible connectors shall have no visible leaks.

c. Testing Pipelines

The Contractor will be required to perform a Low Pressure Air Test on all new sewer lines, in accordance with ASTM F1417, including plugged service lines, as a condition of final acceptance. The line shall be tested from manhole to manhole or in the case of sewer line replacement the testing may be performed between sewer service connections such as "tees" or "wyes". Basically, the test shall consist of installing a special pneumatic plug in the line at each manhole and pressurizing the line to about 4 psi. After a 2-minute temperature stabilization period the line pressure shall be brought to 3.5 psi and timing is begun with a stopwatch. The time required for a drop in pressure of 1.0 psi will be recorded. The minimum allowable time in minutes for this pressure drop to occur shall not exceed:

Pipe Diameter	Minimum Test Time (Min: Sec)	Pipe Length for Min. Time (ft)	Test Time for Longer Length (Sec)
4"	3:46	597	0.380 L
6"	5:40	398	0.854 L
8"	7:34	298	1.520 L
10"	9:26	239	2.374 L
12"	11:20	199	3.418 L
15"	14:10	159	5.342 L
18"	17:00	133	7.692 L
21"	19:50	114	10.470 L
24"	22:40	99	13.674 L
27"	25:30	88	17.306 L
30"	28:20	80	21.366 L

If groundwater is present the test pressure shall be increased 1.0 psi for each 2.3 feet of water above the pipeline.

The tests shall be conducted in the presence of the Engineer or the Owner's Representative and a complete tabulated report of the tests for each section of the sewer shall be prepared by the Contractor and submitted to the Engineer.

In the event of a marginal test at the time of the final inspection, the Engineer or the Owner's Representative may recommend to the Owner that a portion of the Contractor's final payment be withheld pending another inspection of the lines during the worst anticipated seasonal groundwater conditions.

13. Replacing Streets and Roadways

a. General

The Contractor(s) shall replace all streets, alleys and roadways which may be removed, disturbed, or damaged in connection with his operation under this Contract. The Contractor(s) shall reconstruct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition as that which existed prior to his operations. The reuse of materials removed in making excavations will be permitted provided said materials will properly compact.

Gravel, crushed limestone, bituminous materials, or other materials used in the resurfacing of streets shall meet the current requirements of the Standard Specifications of the Tennessee Department of Transportation.

At least one-half of the traveled portion of any open cut roadways must be open to traffic at all times. Further, the Contractor(s) shall maintain traffic in at least one (1) lane at all times. No gravel trenches shall be open to traffic at any time. The Contractor(s) shall coordinate all work in traveled roadways with the city, police and fire departments. The Contractor(s) shall furnish all warning signs, barricades, channelization devices, *etc.*, which may be required. The Contractor(s) will provide these services. All traffic control devices shall be in accordance with the manual of uniform traffic control devices, current revision. The Contractor(s) is solely responsible for job safety and he shall hold the Engineer and the Owner harmless from any claims arising thereof.

b. Backfill of Trenches Under Roadways

Replacement of streets and roadways after trenching shall be handled in the following manner:

When stone is used to backfill the trench, it shall be brought to finished grade.

The Contractor(s) shall maintain the trench by adding stone as specified and as shown on the Plans to keep the trench in a safe and passable condition until such time that sufficient settlement has taken place and the trenches are ready for final resurfacing.

c. Traffic-Bound Base Course

After the backfill on City of Smithville streets has been compacted to within approximately 12 inches of finished grade as specified hereinbefore and as shown on the Plans, the Contractor(s) shall place approximately 12 inches of crushed stone, TDOT Class "A", Grade "D", in 6-inch lifts, as a traffic-bound base course at the proper elevation to allow for settlement, but not in such a way as to present a hazard to traffic from using the roadway.

The Contractor(s) shall maintain the traffic-bound base course by adding crushed stone as specified above in a safe and passable condition for a period of sixty (60) days if dust control is provided or until such time as sufficient settlement has taken place so that a base exists at least 6 inches thick; and trenches are ready for final resurfacing. Crushed stone added to ditches for maintenance after initial backfill will not be cause for additional payment.

d. Subgrade for Final Resurfacing

The traffic-bound course described above shall comprise the base course for all types of resurfacing.

When in the opinion of the Engineer, the trench has reached a condition of settlement satisfactory for final resurfacing, the Contractor(s) shall first strip the base course or backfill of crushed stone -- size as specified above -- to obtain the proper subgrade elevation. The subgrade shall then be rolled with an approved type roller, or tamped until thoroughly compact and 6 inches thick.

Any depressions shall be filled with crushed stone or gravel -as specified- and the process of rolling or tamping continued until the subgrade has a smooth and uniform surface.

e. Portland Cement Concrete Pavement

City streets shall be patched with Portland Cement concrete pavement as shown on the Plans. All concrete shall be Class "A" as specified in Section 3 of these Detailed Specifications.

f. Asphaltic Concrete Pavement Where Directed by the Engineer

(1) Binder Course

Where required Grade "B" binder as specified in the TDOT Special Provision 307, Item 307-03.11 shall be used as a base prior to application of the asphaltic concrete surface. Placement of binder shall be in 4-inch lifts well compacted with a heavy roller.

(2) Asphaltic Concrete Pavement

Where asphaltic concrete pavement is to be replaced, the subgrade shall be prepared as above specified, and this subgrade shall comprise the base course upon which the asphaltic pavement shall be laid. The existing pavement shall be neatly cut back approximately one (1) foot outside the trench and the new pavement tied into the existing.

The subgrade or base shall be thoroughly cleaned and broomed and a prime coat of medium tar shall be uniformly applied at a rate of 0.20 to 0.25 gallons per square yard.

When the prime coat has become tacky, but not dry and hard, the asphaltic concrete shall be placed, spread, finished and compacted in accordance with the current standard specifications of TDOT, Section 411, Grading D, with 85-100 penetration grade asphalt. Compacted thickness of asphaltic concrete pavement replacement shall be a minimum of two (2) inches as shown on the Plans.

g. Untreated Surface

Where the existing surface is untreated crushed stone, the Contractor(s) shall replace the surfacing that is disturbed or removed with crushed stone as above specified to at least the thickness of the existing surface.

14. Finish Grading, Topsoiling and Seeding

Finish grading of disturbed areas shall be performed in accordance with the finished elevations and grades shown on the Plans and shall be made to blend into conformation with remaining natural ground surfaces. All finished grading surfaces shall be left smooth and free to drain. The tops of all cuts shall have berm ditches. Selected materials, which have been obtained from stripping the site, shall be spread upon the slopes of fills and other areas around the tank to a uniform depth and compacted suitable for planting. Excess materials shall be spread and compacted as directed. The top four (4) to six (6) inches of material in areas to be grassed shall be topsoil.

Detailed Specifications
2090 – December 2023

Soil tests shall be performed to determine the seed and fertilizer requirements. For the purposes of bidding, the following grass and fertilizer requirements shall be used:

Annual Rye Grass	application rate	28 lb/acre
Kentucky Fescue #31	application rate	28 lb/acre
Inoculated Clover	application rate	7 lb/acre
Ammonium Nitrate	application rate	200 lb/acre
Commercial Fertilizer	application rate	400 lb/acre
Lime, if required	application rate	200 lb/acre
Straw	application rate	3,000 lb/acre

Seed shall be certified to contain not more than 3 percent weeds.

All graded areas shall be topsoiled with materials stripped from the site. If the Contractor fails to stockpile the topsoil then material shall be brought in. The topsoil shall be left smooth and, after the fertilizer and/or lime has been distributed, it shall be disced or harrowed into the soil.

The seed shall then be sowed in a uniform manner. After sowing, the seed shall then be lightly covered by use of a drag or other approved device.

All seeding, grassing and sodding shall be watered thoroughly as soon as completed and shall be watered to provide continuous growth without setback until all growth is thoroughly established.

Any necessary reseeding, resodding or repairing shall be accomplished by the Contractor without further compensation prior to final acceptance. Final acceptance will occur when an acceptable stand of grass is obtained.

15. Class "C" Concrete

Concrete used for encasements shall be Class "C" concrete as called for on the Plans and Specifications.

16. Class "A" Concrete

Concrete used for sidewalks, driveways, paved ditches, and curb and gutter shall be Class "A" concrete as called for on the Plans and Specifications.

17. Removing and Replacing Concrete Driveways and Paved Ditches

Whenever driveways are removed or disturbed in connection with the construction work, they shall be replaced to the original lines and grades in fully as good or better condition than which existed prior to the Contractor's operation.

After the sub-base has been brought to a satisfactory grade, a 3-inch layer of cinders or crushed stone shall be spread over it and thoroughly tamped. Immediately prior to pouring the concrete, the cinders or stone shall be thoroughly wetted, or the concrete shall be poured on a layer of heavy building paper.

The driveways shall consist of 6 inches of Class "A" concrete, struck off to accurately placed screeds and worked with a wooded float until the mortar appears on top. After the surface has been thoroughly floated, it shall be brushed to leave markings of a uniform type similar to the existing driveway. All joints and edges shall be finished with an edging tool. The allowable joint variation shall be 1/8-inch to 10 feet transversely and longitudinally.

Other types of driveways, such as brick, stone asphaltic concrete, *etc.*, shall be replaced with material removed during the progress of the work, in equally as good condition as that found before the work began.

18. Removing and Replacing Sidewalks, Curbs and Gutters

Sidewalks, curbs and gutters shall be removed and replaced to the nearest joint in each direction. The Contractor shall saw cut the sidewalk curb and gutter at the nearest sidewalk joint each side of the section to be removed. The Contractor shall take care not to damage adjacent sections of sidewalk. Adjacent sections of sidewalk damaged by the Contractor shall be repaired by replacing the entire section at the Contractor's expense.

19. Creek Crossings

Where shown on the Plans or directed by the Engineer, the Contractor(s) shall install temporary project water pollution control devices as specified in Section 1, Paragraph 35. Temporary Project Water Pollution Control (Soil Erosion) of these Detailed Specifications.

SECTION 5

RENOVATION OF GRAVITY SEWER LINES
BY PIPE BURSTING METHODS

1. Scope

The work described under this Section of the Detailed Specifications consists of the furnishing of all labor, materials, equipment and services necessary for the replacement of existing gravity sanitary sewer lines with new polyethylene pipe using the pipe bursting method and the replacement of all associated sewer service connections and associated sewer service lines to the sewer customer's property line. The construction covered by this Section consists of the following approximate quantities:

- 1,999 L.F. of 8-inch Sanitary Gravity Sewer Replacement by Pipe Bursting
- Sewer connections and associated sewer service pipe from the mainline connection to the customer's property line or easement line including the installation of new clean outs at the easement or property line

complete in place with all appurtenances as described in the Specifications and shown on the Plans.

WORK ITEMS RELATED TO MANHOLE REPLACEMENT AND OPEN TRENCH METHODS COMMON TO ALL WORK ARE DESCRIBED IN SECTION 4 OF THESE SPECIFICATIONS. CONTRACTORS AND INSTALLATION SUBCONTRACTORS FOR THE REPLACEMENT TECHNIQUE DESCRIBED IN THIS SECTION ARE DIRECTED TO READ SECTION 4 OF THESE DETAILED SPECIFICATIONS PRIOR TO SUBMITTING A BID FOR THIS CONTRACT.

2. Pre-Installation Preparations

a. Work Plan

The installer of the piping and pipe-bursting system, through the Contractor, shall submit a step by step written work plan to the Engineer as a shop drawing for approval prior to beginning work. No pipe laying or pipe-bursting work shall be undertaken without an approved work plan.

b. Closed-Circuit Television Inspection of Sanitary Sewer Lines Where Directed by the Engineer or Shown on the Plans

Prior to pipe bursting any pipelines on this project, the Contractor shall perform the closed-circuit television work as shown on the Plans or directed by the Engineer.

Closed-Circuit Television Inspection of sanitary sewer lines shall be in accordance with the following specifications:

- (1) The cleaning of sewer lines shall be accomplished by the use of hydraulically-propelled devices. The pipe walls shall be clean enough for the camera to discern structural defects or misalignment of the sewer pipe and inflow and infiltration (I/I) sources.

All sludge, dirt, sand, rock, grease and other solid or semi-solid material shall be removed at the downstream manhole of the section being cleaned. Debris and materials removed in the cleaning process shall be disposed of by the Contractor. All costs associated with disposal of debris and materials are the responsibility of the Contractor and shall be included in the price to perform the CCTV inspection.

- (2) Inspection and documentation of CCTV inspection of sanitary sewers shall be in accordance with the Pipeline Assessment and Certification Program (PACP) published by the National Association of Sewer Service Companies (NASSCO) as modified herein. The CCTV inspection of gravity sewer lines shall be accomplished utilizing a color, closed-circuit television camera to observe conditions in the sewer line. The camera used shall be specifically designated to fit the sewer pipe conditions and it shall have its own light source of illumination. The CCTV camera may be pulled through the sewer line with cables or may be self-propelled, remote-control type. The results shall be shown on a television monitor located at the site and shall be recorded on DVD including audio. Video files shall have a descriptive name including upstream manhole number or computer software shall be provided which allows selection of the video file based on manhole number. A written log must be included. Written logs shall be organized by upstream manhole number and multiple log books shall be labeled accordingly. The Contractor shall provide a copy of the necessary software and training to the Engineer to ensure that the Engineer can view the inspection on computer at the Engineer's office. At the beginning of each line segment, the Contractor shall identify the section of line being inspected by identifying the manhole number or the insertion point of the beginning of the inspection and the

manhole number or the terminal point of the pull. This information shall be included in the video record of the inspection.

In addition to the beginning and ending point of the inspection, the monitor and the video record shall constantly display the location of the camera's focal plane in the line. The location shall be measured in feet beginning with "0" at the centerline of the starting manhole of each inspection and shall be reset to zero at the beginning of each inspection. The display shall show an accurate location of the camera's focal plane at all times and shall be unaffected by temporary pauses or variations in the pulling rate.

The pulling rate shall be such that a clear and accurate evaluation of the entire pipe can be made by the Owner and the Engineer. The camera shall be stopped for a period of time when infiltration/inflow source; structural defects including broken pipe, collapsed pipe, cracks, deterioration, punctures, *etc.*; abnormal joint conditions such as misaligned joints, open joints, and joints not fully sealed, are encountered. The camera shall also be stopped when other unusual conditions are encountered such as root intrusion, protruding pipes, in-line pipe size changes, mineral deposits, grease, obstructions, *etc.* The CCTV camera shall be properly positioned so that the optimum view of the defects may be obtained. Video records which do not show a clear and concise picture of the conditions of the interior of the pipe shall not be accepted. Pictures of each defect shall be included in the written logs. The Contractor, at his own expense, shall re-inspect all sections of pipe for which the inspection was determined to be unacceptable.

At the connecting points between the service connections and the line being inspected, the CCTV camera shall be stopped to check for any flows coming out of the service connection. The CCTV camera shall have the ability to pan and tilt for viewing the service lateral. Whenever a flow is observed, its source shall be evaluated immediately. The Contractor shall visually inspect each service connection and shall specify in writing on the written log whether the service is live or capped as well as any obvious defects.

The Contractor shall provide two (2) copies of a written report listing all defective service connections suspected of needing repair. The information contained in the report shall consist, at a minimum, of the following:

- (a) The beginning and ending manhole numbers for the section of the line being inspected.

- (b) The distance from the centerline of the manhole from which the pull was started to the service connection being evaluated.
- (c) The location at which defects in the pipeline are noted to exist and a description and picture of same. Defects shall include any deformities or low spots greater than 1 inch in 5 feet.
- (d) The horizontal and circumferential location of all taps and/or line penetrations including a description of probable use, live or dead, and picture. There may be instances of water, gas or telephone penetrations of the sewer lines. These are to be immediately reported to the Owner.

Generally, the work will be considered acceptable upon the successful completion of the CCTV inspection of the gravity sewer lines along with submission of the required computer software, DVDs, and logs.

3. Bypass Pumping

See Section 1, Paragraph 5. Bypass Pumping of these Detailed Specifications.

4. Pipe Bursting System

a. General

The pipe bursting system defined by these Detailed Specifications includes the reconstruction of gravity sewer pipe by inserting a solid wall polyethylene pipe in the space occupied by the existing gravity sewer pipe. This reconstruction is accomplished by fragmenting the existing pipe, forcing the fragmented pipe material into the surrounding soil and inserting the polyethylene pipe into the enlarged hole.

The existing pipe shall be fragmented using a static "moling" device pulled through the existing pipe or by using hydraulic or pneumatic bursters, with the replacement pipe pulled or pushed into the enlarged hole.

b. Installer Certification

Installers of pipe bursting systems shall provide written evidence that they are licensed as an installer by the pipe bursting system manufacturer whose system is being used.

5. Pipeline Materials - Gravity Sewers

a. Pipe Material

The replacement pipe shall be manufactured from a high density, high molecular weight polyethylene resin which conforms to the requirements of the latest revision to ASTM D1248 for Type III, Class B, Grade P34, Category 5 and has a PPI rating of PE 3408 when compounded. Additives and fillers; including stabilizers, antioxidants and lubricants; shall not exceed five parts per 100 parts of polyethylene resin in the compound.

The pipe produced from this resin shall have a cell classification of 345464 C, D, or E in accordance with the latest revision to ASTM D3350.

Pipe sizes specified shall be in accordance with the DIPS sizing system in ASTM F714. The minimum wall thickness of the pipe shall be the wall thickness listed at ASTM F714 for the appropriate nominal DIPS pipe size for "dimension ratio" (DR) designation 17.

All polyethylene pipe for gravity sewer pipelines described in this Paragraph shall bear identification markings that will remain legible during normal handling, storage, and installation. Marking on pipe shall include the following and shall be applied at intervals of not more than five feet:

- "ASTM F714"
- Cell Classification "PE 3408" or "345464", "C", "D", or "E"
- Nominal Size (for example, 18 in.) followed by "DIPS"
- "DR 17"
- Name of the Manufacturer
- Production Code from which location and date of manufacture can be identified
- Pipe Test Category (C1, C2, C3, C4, C5, C6 or C7)

b. Joints

Sections of polyethylene replacement pipe shall be joined in the field by heat-fusion bonding using the butt fusion technique in strict accordance with the manufacturer's printed instructions.

Prior to joining the first sections of polyethylene replacement pipe, the skill of the fusion operator shall be evaluated. The operator shall join two short lengths of polyethylene replacement pipe. The Engineer shall cut the joined pipe into sections transverse to the joint and visually examine the joint by performing an inside face bend, an outside face bend, elongation, torque and impact tests. The joint shall not exhibit any voids or brittleness.

6. Installation Procedures

a. General

The installer of the pipe bursting system shall follow the written plan submitted to the Engineer as a shop drawing. The Contractor shall be completely responsible for repairing any damage to structures, drainage facilities, streets or lawns caused by pipe bursting operations. Any damaged facilities shall be repaired to their original condition.

b. Insertion Pits and Joining Polyethylene Replacement Pipe Between Manholes

The Contractor shall construct insertion pits as necessary to accomplish replacement of the existing sanitary sewer line using the pipe bursting system.

Where insertion pits are located between two manholes, the ends of the polyethylene replacement pipe shall be cut smooth and square to the pipe axis such that both ends of the polyethylene replacement pipe meet and touch uniformly. An all- stainless steel, full circle repair clamp shall be used to join the two ends of the polyethylene replacement pipe. The repair clamp shall be a Model 500-20-0899 as manufactured by Mueller Company having a minimum 20-inches laying length or approved equal.

THE COSTS FOR INSERTION PITS INCLUDING BACKFILL GRAVEL AND PAVEMENT REPLACEMENT IN PAVED AREAS AND THE REPLACEMENT OF MANHOLES NOT DESIGNATED FOR REPLACEMENT ARE NOT SEPARATE PAY ITEMS AND SHALL BE INCLUDED IN THE COST FOR THE REPLACEMENT PIPE.

c. Connection of Replacement Pipe to Existing and New Manholes

Where existing manholes are to be replaced, the polyethylene replacement pipe shall be stopped three (3) feet outside the new manhole. A three (3) feet long section of polyethylene sewer pipe shall be installed in the pipe connector of the new manhole. These pipes shall be connected together as described in Paragraph 6.b. hereinbefore.

Where existing manholes will remain, the area of the existing manhole wall around the existing pipe entering the manhole shall be carefully cut and chipped approximately four (4) inches from around the existing pipe prior to beginning pipe bursting. An expansive hydrophilic water stop shall be installed over the polyethylene replacement pipe. The expansive hydrophilic water stop shall be Hydrotite type DS as manufactured by Greenstreak, Inc. or approved equal. Position the pipe such that the water

stop is located within the center of the existing manhole wall. Grout will be placed between the manhole wall and outside pipe using an expansive, non-shrink grout. A concrete collar made of Class "C" concrete will be placed on the outside of the existing manhole. After the grout has had sufficient time to cure, the polyethylene replacement pipe shall be cut off inside the existing manhole within four (4) inches of the inside face of the existing manhole wall. Any damage to the invert bench or flow line in the existing manhole shall be repaired using Class "C" concrete as specified at no cost to the Owner.

The cost for connecting the replacement pipe to existing and new manholes is not a separate pay item and shall be included in the cost of the replacement pipe.

THE CONTRACTOR SHALL SUBMIT A MANHOLE CONNECTION DETAIL SHOWING PROPOSED MATERIALS AND METHODS USED TO PROVIDE A LEAKPROOF CONNECTION AT THE REPLACEMENT PIPE AND MANHOLE INTERFACE PRIOR TO BEGINNING ANY WORK ON SITE.

d. Connection of Existing Sewer Service Lines to the Polyethylene Replacement Pipe

Existing sewer service connections and service lines to the existing collector or interceptor sewer shall be exposed from the existing sewer line to the property line or easement line of the sewer customer before beginning installation of the polyethylene replacement pipe on any segment of the existing collector or interceptor sewer. All existing sewer service connections shall be disconnected from the existing collector or interceptor sewer and all service lines shall be replaced from the existing collector or interceptor sewer line to the property line or easement line of the sewer customer prior to beginning installation of the polyethylene replacement pipe on any segment of the collector or interceptor sewer.

Sewer service connections to the polyethylene replacement pipe shall be made using an Inserta Tee as manufactured by Fowler Manufacturing Company, or approved equal. The Inserta Tee shall be sized to fit the diameter and thickness of the sewer main and shall be attached directly to the polyethylene replacement pipe using a stainless steel strap.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR SERVICE REINSTATEMENT MATERIALS ALONG WITH A DETAILED CONNECTION PLAN FOR REINSTATING SERVICES FOR APPROVAL PRIOR TO BEGINNING ANY WORK ON SITE.

The sewer service line and cleanout piping and fittings shall be 6-inch diameter SDR 26 PVC pipe, except at drainage ditch crossings where the service line shall have one joint of 6-inch diameter Class 350 Ductile Iron Pipe centered about the centerline of the drainage ditch.

Special flexible couplings shall be used to connect the new SDR 26 PVC service line pipe to existing service line pipe and join the new D.I.P. to the new PVC pipe where necessary. The couplings shall be of elastomeric PVC and provide leak proof connection between sewer lines of differing materials. Restraining bands shall be stainless steel. Flexible couplings shall be as manufactured by Fernco, Inc. or approved equal.

Sewer service lines shall be installed as shown on the Plans and using the open trench specifications as shown in Section 4. Each sewer service line shall include a cleanout, as shown on the Detail Sheet of the Plans, located at the sewer customer's property line or easement line.

7. Testing Rehabilitated Gravity Sewers

Gravity sewers replaced by pipe bursting methods shall be tested in accordance with Section 4, Paragraph 12. Leakage Testing of New Gravity Sewer Lines of these Detailed Specifications.

8. Post Construction Television Inspection

The Contractor shall perform a post installation video inspection of all lines that were replaced to demonstrate the completed condition. This inspection shall be conducted after all services have been connected and the sewer line has passed the testing.

Special attention should be given to service connection points and any suspected leaks or deficiencies. If video inspection reveals any defects in the installation, line blockages, or leaks, the Contractor shall repair such problems, retest the sewer line and re-video inspect said sewer line.

The cost of this video inspection is NOT a separate pay item and shall be included in the cost of rehabilitation. Two (2) copies of the post-construction television inspection shall be submitted to the Engineer in USB or Electronic format along with a licensed copy of any special software required to view the video.

FINAL PAYMENT WILL BE HELD UNTIL POST-CONSTRUCTION VIDEO HAS BEEN REVIEWED BY THE OWNER.

SECTION 6
BASIS OF PAYMENT

1. General

The Contractor(s) for Contract 23-01 shall furnish all necessary tools, labor, machinery, apparatus, materials, equipment, service and other necessary supplies and do all work including all excavation and backfilling at the unit or lump sum prices for the items listed in the BID FORM.

ROCK EXCAVATION, SHEETING, SHORING AND BRACING OF EXCAVATIONS AS SHOWN ON THE PLANS ARE NOT SEPARATE PAY ITEMS.

These items refer to and are the same items listed in the BID FORM and constitute all of the pay items. Any other items of work listed in these Detailed Specifications or shown on the Plans shall be considered incidental to the following items.

2. Gravity Sewer Lines by Open-Cut Methods

Payment for bedding of gravity sewer lines of the type, size, length, and depth of cut shown in the BID FORM will be made at the contract unit price per linear foot, complete in place, including pipe, trenching, removal of pavement or sidewalk by saw cutting, jointing, service lateral fittings, locator tape, removal of water, crushed stone, and bedding where shown on the Plans and all incidentals thereto, also backfilling, check dams, connections to existing sewers and plugs that are required. The quantity of sewer to be paid for shall be the length of the pipe measured along the centerline of the completed pipelines without deducting the same length of any fittings or manholes. The depth of cut is measured vertically from the ground elevation at the centerline to the invert of the pipe.

3. Plugging Existing Sewer

No additional payment will be made for plugging existing sewers.

4. Renovation of Existing Gravity Sewer Lines Using Pipe Bursting

Renovation of existing gravity sewer lines using pipe bursting of the various sizes will be paid for at the Contract unit price per linear foot shown in the BID FORM, complete in place, including television inspection; cleaning of existing sewer line; pipe bursting HDPE pipe, bypass pumping; connection of the liner pipe to new and existing manholes; and all incidentals thereto. The quantity of pipe bursting to be paid for shall be the length of the existing gravity sewer line renovated using

pipe bursting without deducting the length of tees, fittings, point repairs, and manholes.

THE COSTS FOR INSERTION PITS INCLUDING BACKFILL GRAVEL AND PAVEMENT REPLACEMENT IN PAVED AREAS AND THE REPLACEMENT OF MANHOLES NOT DESIGNATED FOR REPLACEMENT ARE NOT SEPARATE PAY ITEMS AND SHALL BE INCLUDED IN THE COST FOR THE REPLACEMENT PIPE.

5. Pipe for Sewer Service Connections

Pipe in excess of the 3 feet included in the pay item for sewer service connections of the size and material shown in the BID FORM will be paid for at the Contract unit price per linear foot shown in the BID FORM, either vertical or horizontal, complete in place, including all excavation, crushed stone bedding, crushed stone initial backfill, fittings, and connection to fittings as specified hereinbefore. This pay item will be from the sewer customer's property line or easement line to within 3 feet of the collector sewer line and shall include special fittings required for connection to the existing sewer service line. BYPASS PUMPING, ROCK EXCAVATION, SHEETING, SHORING AND BRACING OF EXCAVATIONS, BEDDING, AND CRUSHED STONE BACKFILL AS SHOWN ON THE PLANS AND SPECIFIED HEREIN ARE NOT SEPARATE PAY ITEMS.

ASPHALTIC CONCRETE PAVEMENT OR PORTLAND CEMENT CONCRETE WILL BE PAID FOR UNDER SEPARATE PAY ITEMS.

6. Sewer Service Connections

Sewer service connections of the sizes shown in the BID FORM for connection of building sewers (service lines) to the collector or interceptor sewer will be paid for at the Contract unit price per each shown in the BID FORM complete in place, including all fittings, 3 feet of service line, 6-inch diameter cleanout with riser and plug, inspection box, all excavation, backfill adapters as required and appurtenances as shown on the Plans.

BYPASS PUMPING, ROCK EXCAVATION, SHEETING, SHORING AND BRACING OF EXCAVATIONS, BEDDING, AND CRUSHED STONE BACKFILL AS SHOWN ON THE PLANS AND SPECIFIED HEREIN ARE NOT SEPARATE PAY ITEMS.

ASPHALTIC CONCRETE PAVEMENT OR PORTLAND CEMENT CONCRETE WILL BE PAID FOR UNDER SEPARATE PAY ITEMS.

7. Connections to Existing Facilities

Unless shown as a pay item in the BID FORM, all connections are considered incidental to work and the cost of same shall be included in the appropriate pay items.

8. Replacement of Existing Manhole or Addition of Manhole to Existing Sewer

A standard manhole is defined as a manhole which is 6'-0" or less in depth measured from the base of the cover frame to the top of the concrete footing and having a standard frame and cover. Standard manholes will be paid for at the contract unit price shown in the BID FORM each for the size and type indicated, and will include the manhole, complete with footing, all precast concrete rings, cast iron frame and self-sealing or vented cover, invert paving, drop pipe with fittings, and Class "C" concrete invert, crushed stone backfill under paved areas, backfilling - all as shown on the Plans, vacuum testing the manhole, and more fully described herein - all excavation and pavement removal by saw cutting. The price shall also include connection of existing sewer lines and demolition of the existing manhole and temporary or permanent piping through or around the manhole where required. Extra payment will be made at the contract unit price for vertical feet of extra depth. BYPASS PUMPING, ROCK EXCAVATION, SHEETING, SHORING AND BRACING OF EXCAVATIONS, BEDDING, AND CRUSHED STONE BACKFILL AS SHOWN ON THE PLANS AND SPECIFIED HEREIN ARE NOT SEPARATE PAY ITEMS.

ASPHALTIC CONCRETE PAVEMENT OR PORTLAND CEMENT CONCRETE WILL BE PAID FOR UNDER SEPARATE PAY ITEMS.

9. Standard Drop Manholes

A standard drop manhole is defined as a manhole which is 6'-0" or less in depth measured from the base of the cover frame to the top of the concrete footing and having a standard frame and cover. Standard drop manholes will be paid for at the contract unit price each shown in the BID FORM, and will include the manhole, complete with footing, each for the size and type indicated precast barrel, precast concrete rings, cast iron frame and self-sealing or vented cover, Class "C" concrete invert, drop pipe with fittings, vacuum testing the manhole, all as shown on the Plans and more fully described herein. The price shall also include connection of existing sewer lines and razing of existing manholes and temporary or permanent piping through or around the manhole where required. Extra payment will be made at the contract unit price for vertical feet of extra depth.

10. Manhole Barrel Extension

For standard manholes greater than 6'-0" in depth, the additional manhole barrel measured as set out in these Detailed Specifications will be paid for at the contract unit price per vertical foot of additional depth as shown in the BID FORM for the type and size indicated including excavation and crushed stone backfill. BYPASS PUMPING, ROCK EXCAVATION, SHEETING, SHORING AND BRACING OF EXCAVATIONS, BEDDING, AND CRUSHED STONE BACKFILL AS SHOWN ON THE PLANS AND SPECIFIED HEREIN ARE NOT SEPARATE PAY ITEMS.

ASPHALTIC CONCRETE PAVEMENT OR PORTLAND CEMENT CONCRETE WILL BE PAID FOR UNDER SEPARATE PAY ITEMS.

11. Undercutting of Trench and Stone for Undercutting

Where undercutting and stone refill of the trench is directed by the Engineer, the crushed stone used to bring the trench back to grade will be paid for at the contract unit price per cubic yard as shown in the BID FORM. The quantity will be computed from a plane 6 inches below the invert of the pipe to the bottom of the ordered extra excavation using the actual ditch width but not exceeding the maximum width allowed by these Detailed Specifications. Excavation of undercutting is NOT a separate pay item. The Contractor(s) will furnish the Engineer a duplicate weigh slip for all such undercutting material delivered to the job for records as a check on computations.

12. Class "A" Concrete for Sidewalks, Driveways and Paved Ditch Removal and Replacement

Class "A" concrete for sidewalks, driveways and paved ditch will be paid for at the contract unit price per square yard shown in the BID FORM, complete in place. Price of reinforcement shall be included in the cost of the concrete.

13. Class "A" Concrete for Curb and Gutter Removal and Replacement

Class "A" concrete for curb and gutter removal and replacement will be paid for at the contract unit price per linear foot shown in the BID FORM complete in place. Price of reinforcement shall be included in the cost of the concrete.

14. Class "C" Concrete for Encasement

Class "C" concrete for encasement where directed by the Engineer will be paid for at the contract unit price per cubic yard shown in the BID FORM, complete in place.

15. TDOT No. 67 Crushed Stone for Ditch Backfill Under Paved Surfaces Where Required by the Engineer

Where directed by the Engineer, TDOT No. 67 crushed stone backfill above the sewer line pipe bedding as shown on the Plans or specified hereinbefore will be paid for at the contract unit price per theoretical cubic yard of material furnished and placed, and mechanically tamped in 6-inch layers, as shown in the BID FORM. The theoretical quantity will be computed from the bottom of the ditch to the completed surface using either the actual ditch width or the maximum specified width of the ditch, whichever is smaller. The specified trench width is the nominal diameter of pipe plus 18 inches. ANY ADDITIONAL TRENCH WIDTH WILL BE CONSIDERED OVER-BREAKAGE WHICH SHALL BE BACKFILLED AT THE CONTRACTOR'S EXPENSE.

16. Dense Grade Aggregate Crushed Stone for Traffic Bound Surfacing, Base Course and/or Backfill Where Required by the Engineer

Where directed by the Engineer, crushed stone backfill above the sewer line pipe bedding as shown on the Plans or specified hereinbefore will be paid for at the contract unit price per theoretical cubic yard of material furnished and placed, and mechanically tamped in 6-inch layers, as shown in the BID FORM. The theoretical quantity will be computed from the bottom of the ditch to the completed surface using either the actual ditch width or the maximum specified width of the ditch, whichever is smaller. The specified trench width is the nominal diameter of pipe plus 18 inches.

17. Binder Course for Roadways

The binder course will be paid for at the contract unit price per cubic yard shown in the BID FORM, complete in place.

The MAXIMUM allowable width for determination of pay quantities is six (6) feet. Theoretical quantities have been computed based on the actual depth up to a maximum of eight (8) inches as shown on the Plans. Any additional binder required to maintain the traveled surface prior to paving shall be at the Contractor's expense.

18. Asphaltic Concrete Pavement

Asphaltic concrete pavement will be paid for at the contract unit price per cubic yard shown in the BID FORM, complete in place, including primer. The Contractor(s) shall replace all other damaged pavement at his own expense.

The maximum allowable width for determination of pay quantities is as follows unless otherwise specified or shown on the Plans:

<u>Pipe or Force Main Size</u>	<u>Allowable Width</u>
24-inch or less	5.0 feet
<u>Manholes</u>	<u>Allowable Dimensions</u>
4 foot diameter/manhole	10.0 feet diameter
5 foot diameter/manhole	12.0 feet diameter

19. Temporary Silt Fence

Temporary silt fence with hay or straw bales installed as shown on the Plans or as directed by the Engineer will be paid for, complete in place, at the contract unit price shown in the BID FORM per liner foot, including removal of the temporary silt fence and hay or straw bales within the one year warranty period and at the direction of the Engineer.

20. Impervious Check Dams

Check dams constructed with impervious soil so as to prevent migration of water along the pipeline as shown on the Plans or as directed by the Engineer will be paid for, complete in place, at the contract unit price per each as shown in the BID FORM.

21. Rip-Rap

Where shown on the Plans or where directed by the Engineer, rip-rap shall be placed along pipe alignments, in disturbed areas, or to stabilize slopes. Rip-rap will be paid for at the contract unit price per theoretical square yard of material furnished and placed, as shown in the BID FORM.

22. Restrained Joint Pipe

Restrained joint pipe where shown on the Plans or directed by the Engineer will be paid for at the contract unit price per linear foot as shown in the BID FORM. Restraint against flotation is not a separate pay item.

23. Razing of Existing Manholes

Payment for razing existing manholes shall be made at the contract lump sum price, complete in place, as shown on the Plans, including all equipment removal, excavation and backfill, manhole work, electrical work, site restoration and addition of sufficient topsoil and appurtenant work as shown in the BID FORM.

24. Aerial Pipe Supports

Payment to construct concrete aerial pipe supports at the locations shown on the Plans or where directed by the Engineer shall be made at the contract unit price

Detailed Specifications

2090 – December 2023

in the BID FORM, complete in place, including all excavation and backfill, concrete, reinforcing steel, pipe straps, site restoration, and appurtenant work.

SEWER SYSTEM IMPROVEMENTS

FOR THE CITY OF

SMITHVILLE, TENNESSEE

CONTRACT 23-01

SEWER SYSTEM REHABILITATION

TO BE CONSTRUCTED WITH A GRANT FROM THE
TENNESSEE DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT
CDBG PROJECT NO. 15357
ARPA GRANT NO. 2022-8686

PROJECT NO. 2090

DECEMBER, 2023

WAUFORD

Nashville, Tennessee
(615)883-3243
www.jrwauford.com



Know what's below.
Call before you dig.



INDEX OF DRAWINGS

SHEET	DESCRIPTION
1.	KEY MAP, LEGEND, AND GENERAL NOTES
2.	SEWER LINE "S-1" - W. BROAD ST. STA. 00+00 TO E.O.L.
3.	SEWER LINE "S-2" - WHALEY ST. STA. 00+00 TO E.O.L.
4.	SEWER LINE "S-3" - FOSTER ROAD STA. 00+00 TO 11+00
5.	SEWER LINE "S-3" - FOSTER ROAD STA. 11+00 TO 22+00
6.	SEWER LINE "S-3" - FOSTER ROAD STA. 22+00 TO E.O.L.
7.	SEWER LINE "S-4" - S. CONGRESS BLVD. STA. 00+00 TO 14+00
8.	SEWER LINE "S-4" - S. CONGRESS BLVD. STA. 14+00 TO 28+00
9.	SEWER LINE "S-4" - S. CONGRESS BLVD. STA. 28+00 TO E.O.L.
10.	DETAIL SHEET
11.	DETAIL SHEET

CITY OFFICIALS

MAYOR
JOSH MILLER

VICE MAYOR
DANNY WASHER

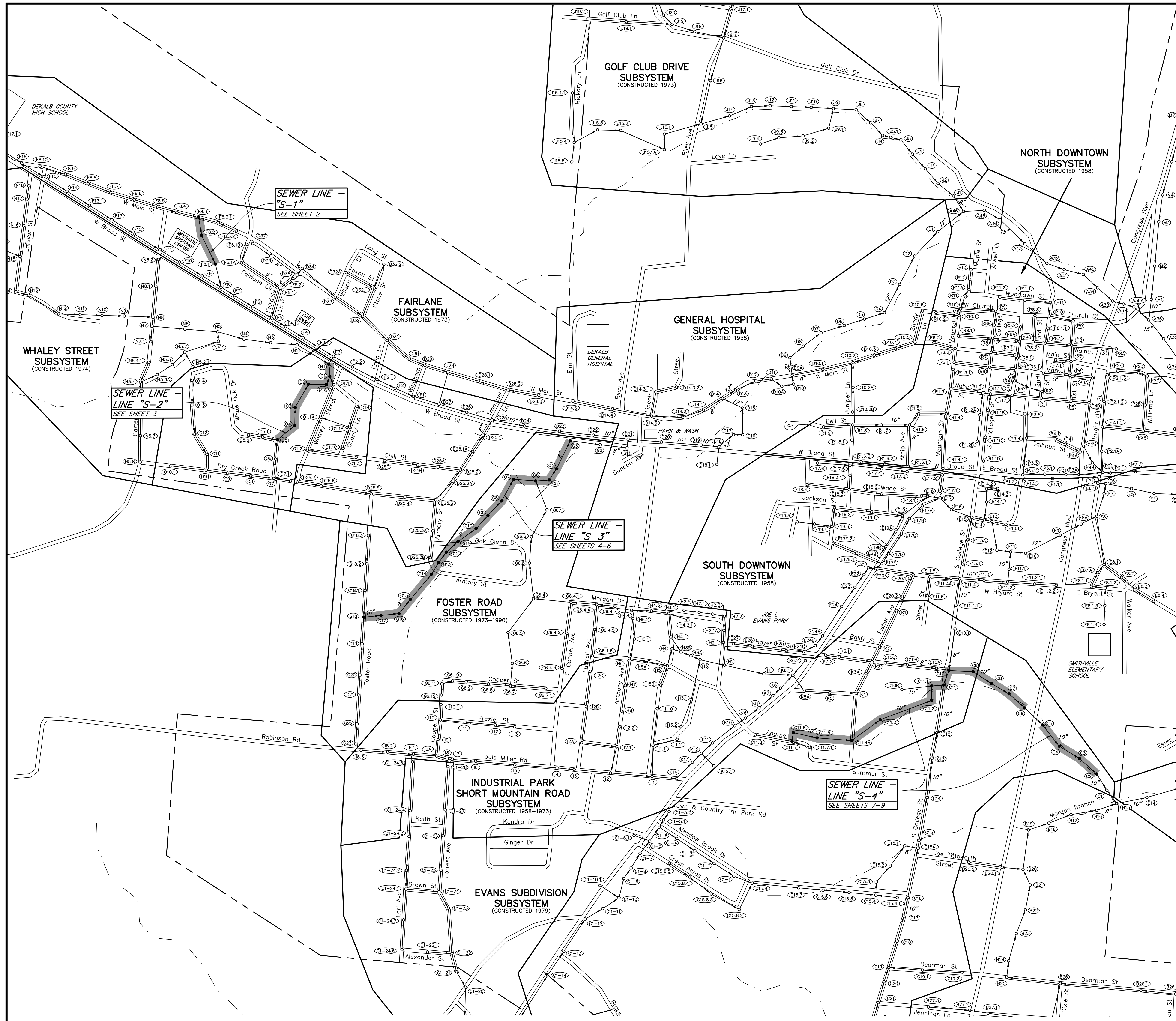
ALDERMEN
SHAWN JACOBS
DONNIE CROOK
JESSICA HIGGINS
BETH CHANDLER
DANNY WASHER

CITY ADMINISTRATOR
HUNTER HENDRIXSON

PUBLIC WORKS DIRECTOR
KEVIN ROBINSON

CITY ATTORNEY
VESTER PARSLEY, JR.

APPROVED: 
HUNTER HENDRIXSON, CITY ADMINISTRATOR



KEY MAP LEGEND

OPEN-CUT REPLACE/PIPE BURST

LEGEND FOR PLAN SHEETS

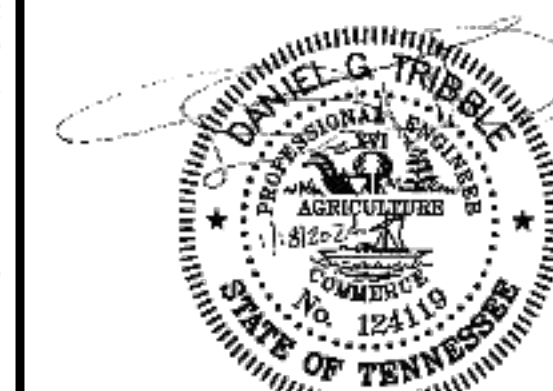
MANHOLE TO BE REPLACED
 PROPOSED
 OPEN-CUT REPLACE/PIPE BURST
 PROPOSED MANHOLE

EXISTING

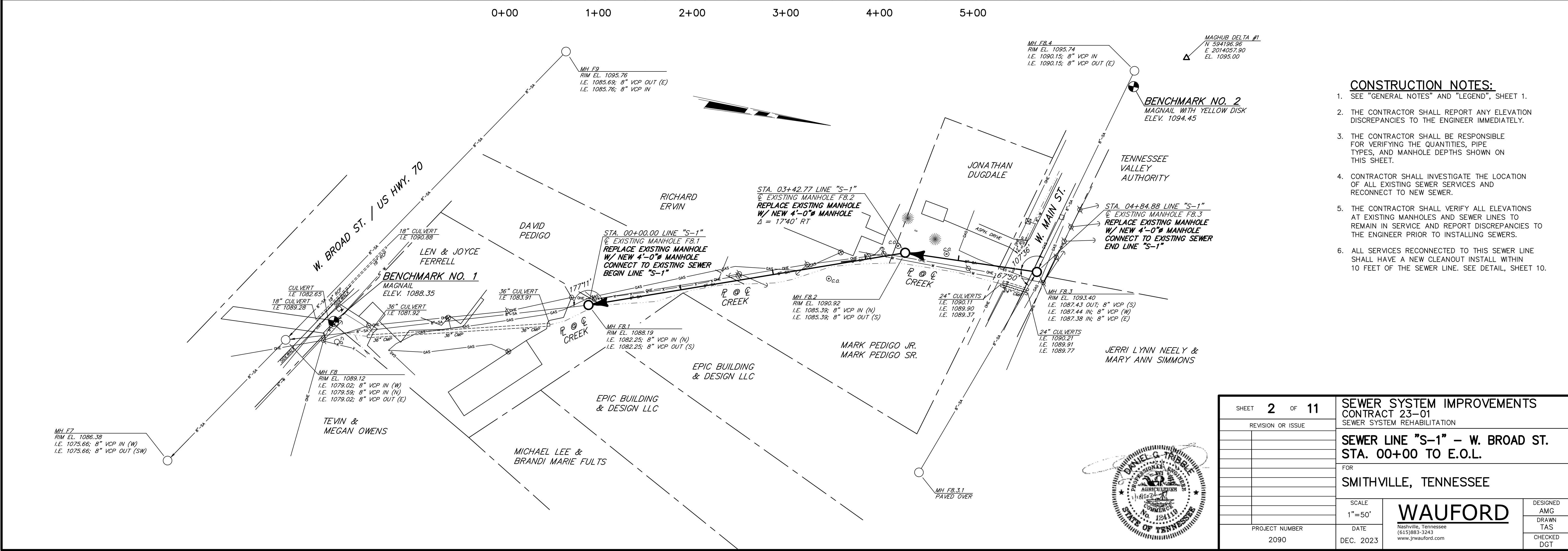
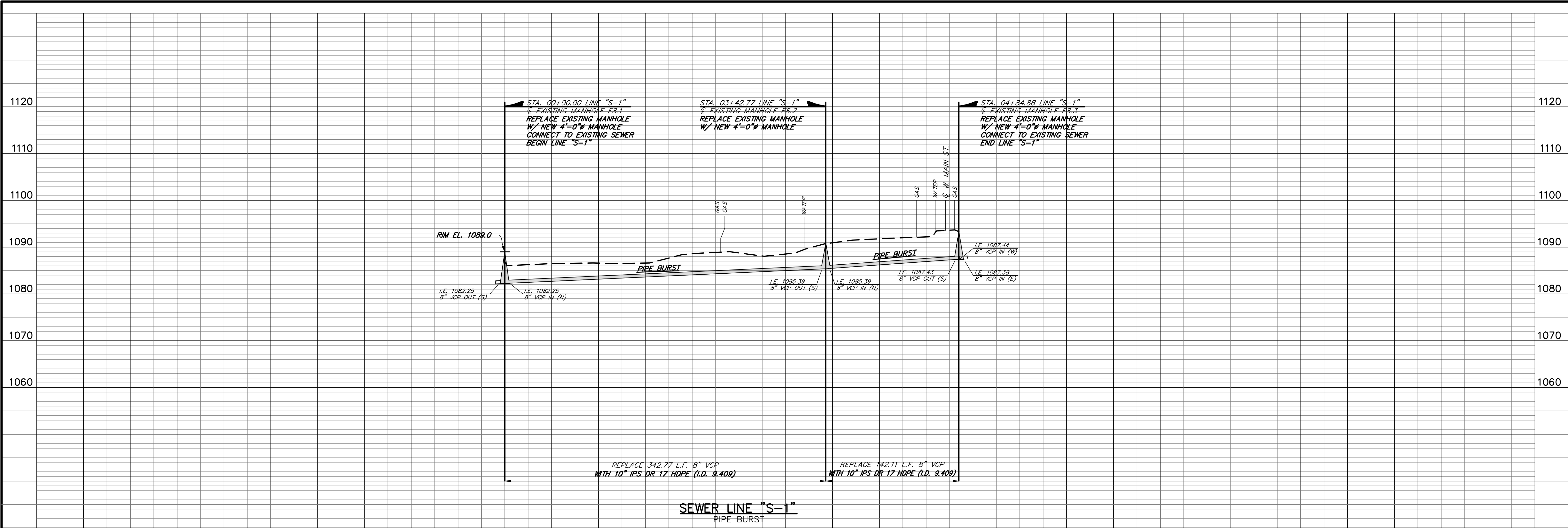
- W WATER LINE
- SA SEWER LINE
- FM FORCE MAIN
- G GAS LINE
- UGE UNDERGROUND ELECTRIC
- OHE OVERHEAD ELECTRIC
- UGT UNDERGROUND TELEPHONE
- RIGHT-OF-WAY
- PROPERTY LINE
- PAVED SURFACE
- UNPAVED SURFACE
- RAILROAD TRACKS
- CULVERT
- TOP / TOE OF BANK
- DITCH LINE OR CREEK
- TREE LINE
- TREE
- HEDGE ROW
- BUSH
- FENCE LINE
- WATER METER
- GAS METER
- VALVES
- FIRE HYDRANT
- POWER POLE & GUY WIRE
- SIGNS
- MAILBOX
- CATCH BASIN
- RIGHT-OF-WAY MONUMENT
- PROPERTY PIN
- BENCHMARK
- GEOTECHNICAL BORE HOLE
- MANHOLE

GENERAL NOTES

1. AT LEAST THIRTY (30) DAYS PRIOR TO THE DUE DATE ON WHICH CONSTRUCTION IS SCHEDULED TO BEGIN, THE ENGINEER WILL SUBMIT, ON BEHALF OF THE OWNER, A "NOTICE OF INTENT FOR GENERAL NPDES PERMIT TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY" IN ACCORDANCE WITH TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION CONSERVATION RULE CHAPTER 0400-40-10-03. THE CONTRACTOR SHALL SIGN A STATEMENT TO BE PROVIDED BY THE ENGINEER PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES WHICH STATES THAT HE UNDERSTANDS THE CONDITIONS OF THE GENERAL PERMIT AND ACCEPTS RESPONSIBILITY FOR COMPLIANCE.
2. WORK UNDER THIS PROJECT IS COVERED BY THE RULES OF THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, WATER QUALITY CONTROL BOARD, DIVISION OF WATER POLLUTION CONTROL, CHAPTER 0400-40-7 AQUATIC RESOURCES ALTERATION, SECTION 0400-40-7-04 "GENERAL PERMIT FOR UTILITY LINE CROSSING OF STREAMS" IS SPECIFIC TO THIS PROJECT. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF THIS GENERAL PERMIT FOR UTILITY LINE CROSSINGS OF STREAMS AND POLLUTION LAWS AND REGULATIONS APPLICABLE TO CONSTRUCTION OF THE WORK INCLUDED IN THIS PROJECT.
3. ALL STANDARD MANHOLE FRAMES AND COVERS SHALL BE SELF-SEALING AS SET OUT IN THE DETAILED SPECIFICATIONS AND SHOWN ON THE PLANS, UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF CONSTRUCTION AS SET OUT IN SECTION 1 OF THE DETAILED SPECIFICATIONS.
5. THE NAMES OF THE PROPERTY OWNERS, LOCATIONS OF PROPERTY LINES AND LOCATIONS OF STREET AND ROAD RIGHTS-OF-WAY SHOWN ON THESE PLANS WERE OBTAINED FROM THE TAX MAPS, THE DEKALB COUNTY TAX ASSESSOR AND PROPERTY SURVEYS PROVIDED BY THE OWNER. THIS INFORMATION IS GENERAL IN NATURE AND THE ENGINEER MAKES NO CLAIM TO THE ACCURACY OF THIS INFORMATION.
6. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF CONSTRUCTION AS DESCRIBED IN SECTION 1 OF THE DETAILED SPECIFICATIONS.
7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DISPOSAL OF WASTE MATERIALS GENERATED DURING CONSTRUCTION. THE OWNER SHALL HAVE RIGHTS TO ALL SALVAGEABLE MATERIALS. REFER TO SECTION 1 OF THE DETAILED SPECIFICATIONS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIRS AND/OR REPLACEMENT IN KIND OF ALL EXISTING DRAINAGE CULVERTS AND OTHER STRUCTURES DISTURBED DURING CONSTRUCTION. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
9. ANY BYPASS PUMPING REQUIRED TO PERFORM THIS CONTRACT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. BYPASS PUMPING IS NOT A SEPARATE PAY ITEM.



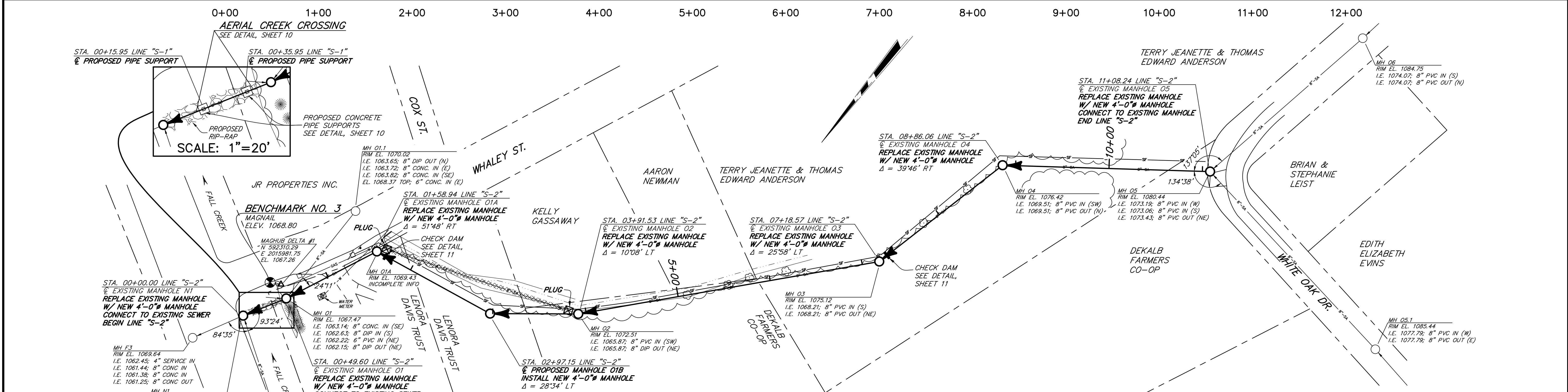
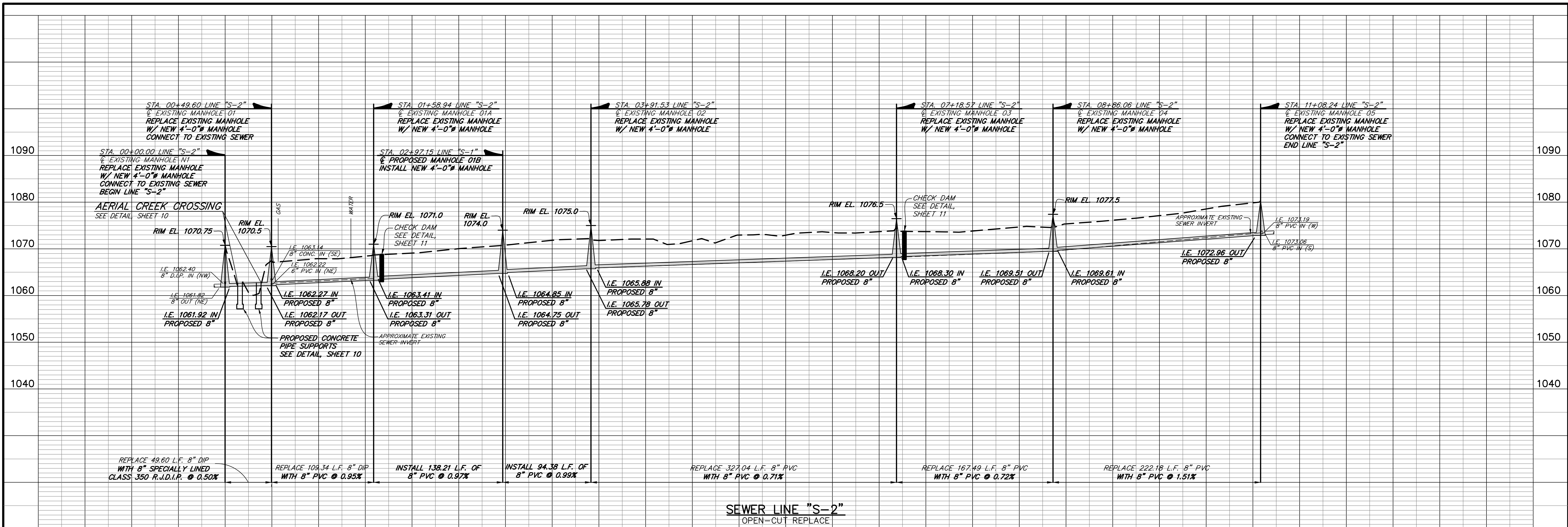
SHEET 1 OF 11	SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION
REVISION OR ISSUE	KEY MAP, LEGEND, AND GENERAL NOTES
	FOR SMITHVILLE, TENNESSEE
PROJECT NUMBER 2090	SCALE 1"=500'
DATE DEC. 2023	DESIGNED AMG
	DRAWN TAS
	CHECKED DGT



- CONSTRUCTION NOTES:**
1. SEE "GENERAL NOTES" AND "LEGEND", SHEET 1.
 2. THE CONTRACTOR SHALL REPORT ANY ELEVATION DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES, PIPE TYPES, AND MANHOLE DEPTHS SHOWN ON THIS SHEET.
 4. CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
 5. THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AT EXISTING MANHOLES AND SEWER LINES TO REMAIN IN SERVICE AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.
 6. ALL SERVICES RECONNECTED TO THIS SEWER LINE SHALL HAVE A NEW CLEANOUT INSTALL WITHIN 10 FEET OF THE SEWER LINE. SEE DETAIL, SHEET 10.

SHEET 2 OF 11	SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION
REVISION OR ISSUE	SEWER LINE "S-1" - W. BROAD ST. STA. 00+00 TO E.O.L.
	FOR SMITHVILLE, TENNESSEE
SCALE 1"=50'	WAUFORD Nashville, Tennessee (615)883-3243 www.jrwauford.com
PROJECT NUMBER 2090	DATE DEC. 2023
	DESIGNED AMG DRAWN TAS CHECKED DGT



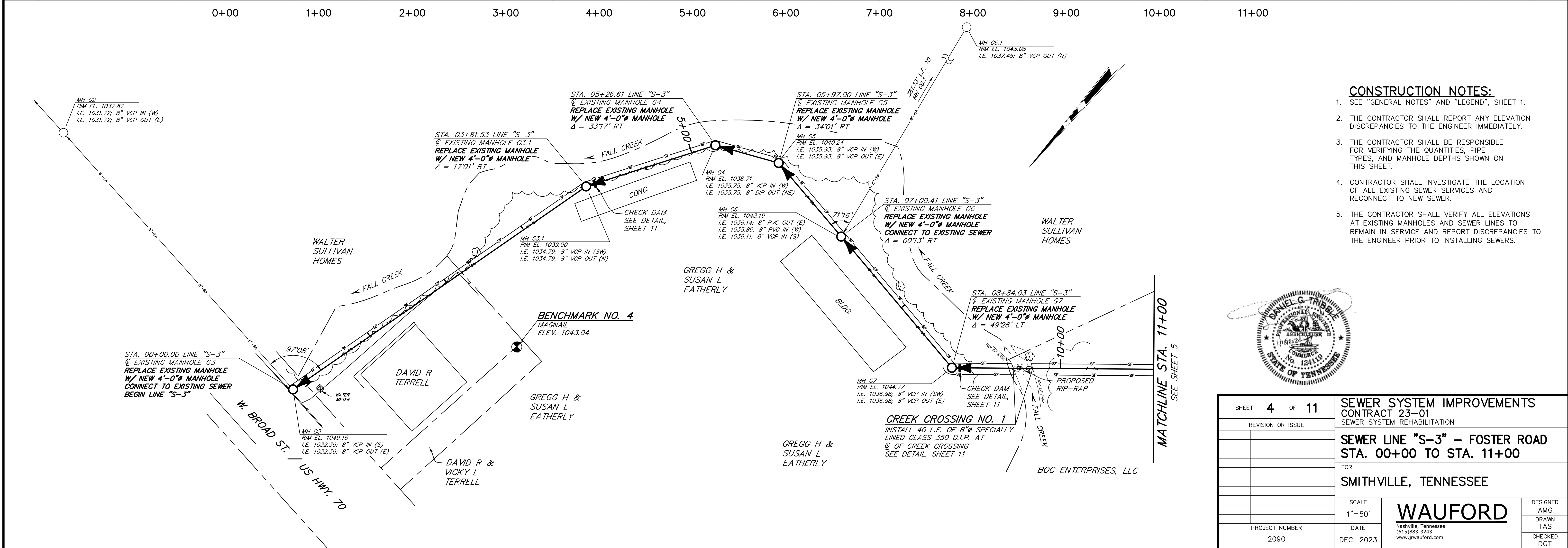
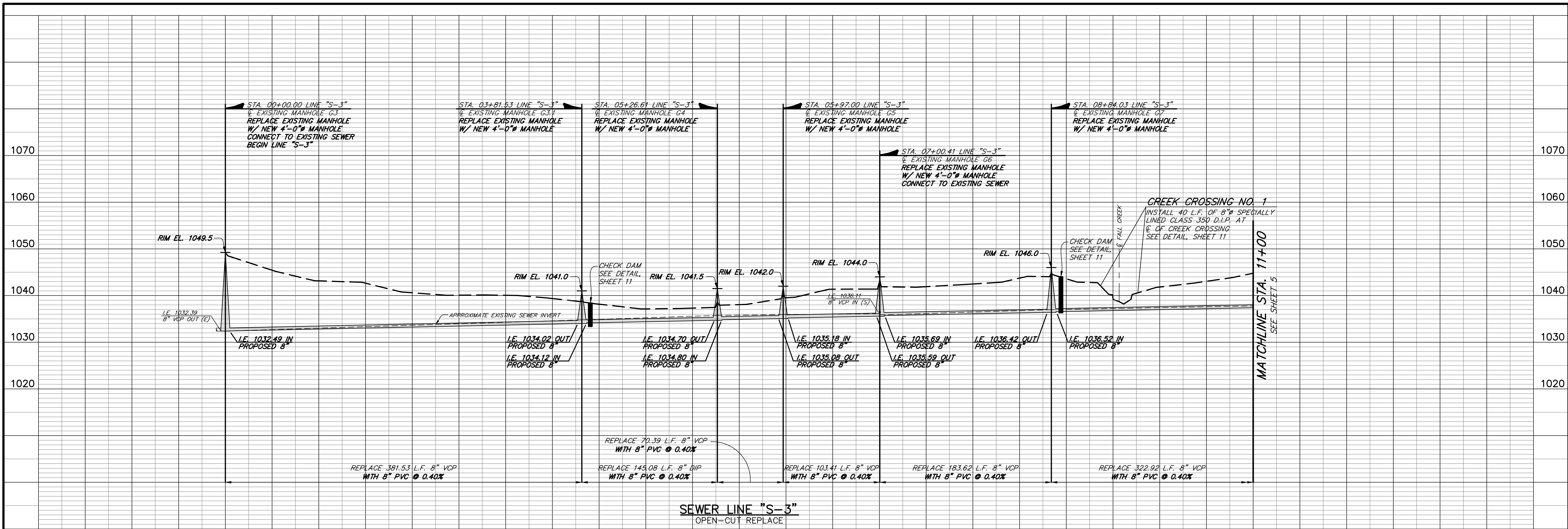


CONSTRUCTION NOTES:

- SEE "GENERAL NOTES" AND "LEGEND", SHEET 1.
- THE CONTRACTOR SHALL REPORT ANY ELEVATION DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES, PIPE TYPES, AND MANHOLE DEPTHS SHOWN ON THIS SHEET.
- CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
- THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AT EXISTING MANHOLES AND SEWER LINES TO REMAIN IN SERVICE AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.
- CONTRACTOR SHALL INVESTIGATE THE 6" PVC LINE AT MANHOLE O1 AND DETERMINE IF IT IS LIVE OR CAN BE ABANDONED PRIOR TO ORDERING MANHOLE.



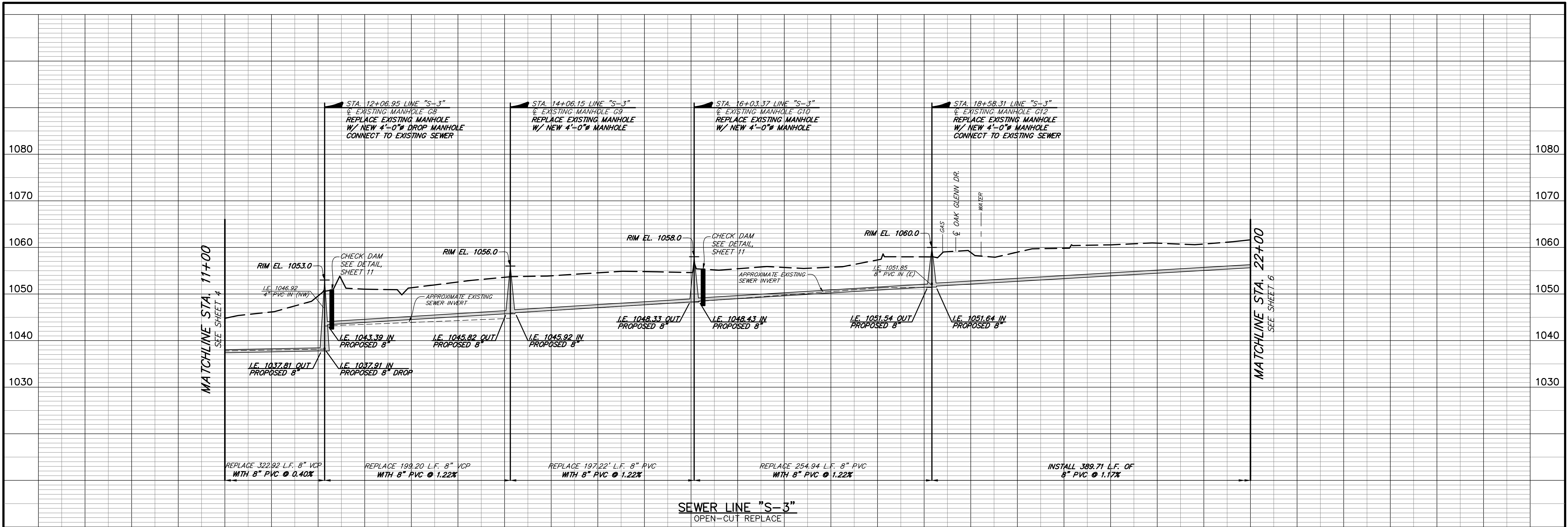
SHEET 3 OF 11	SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION
REVISION OR ISSUE	
SEWER LINE "S-2" - WHALEY ST. STA. 00+00 TO E.O.L.	
FOR SMITHVILLE, TENNESSEE	
SCALE 1"=50'	DESIGNED AMG DRAWN TAS CHECKED DGT
PROJECT NUMBER 2090	
DATE DEC. 2023	WAUFORD Nashville, Tennessee (615)883-3243 www.jrwauford.com



- CONSTRUCTION NOTES:**
1. SEE "GENERAL NOTES" AND "LEGEND", SHEET 1.
 2. THE CONTRACTOR SHALL REPORT ANY ELEVATION DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES, PIPE TYPES, AND MANHOLE DEPTHS SHOWN ON THIS SHEET.
 4. CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
 5. THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AT EXISTING MANHOLES AND SEWER LINES TO REMAIN IN SERVICE AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.

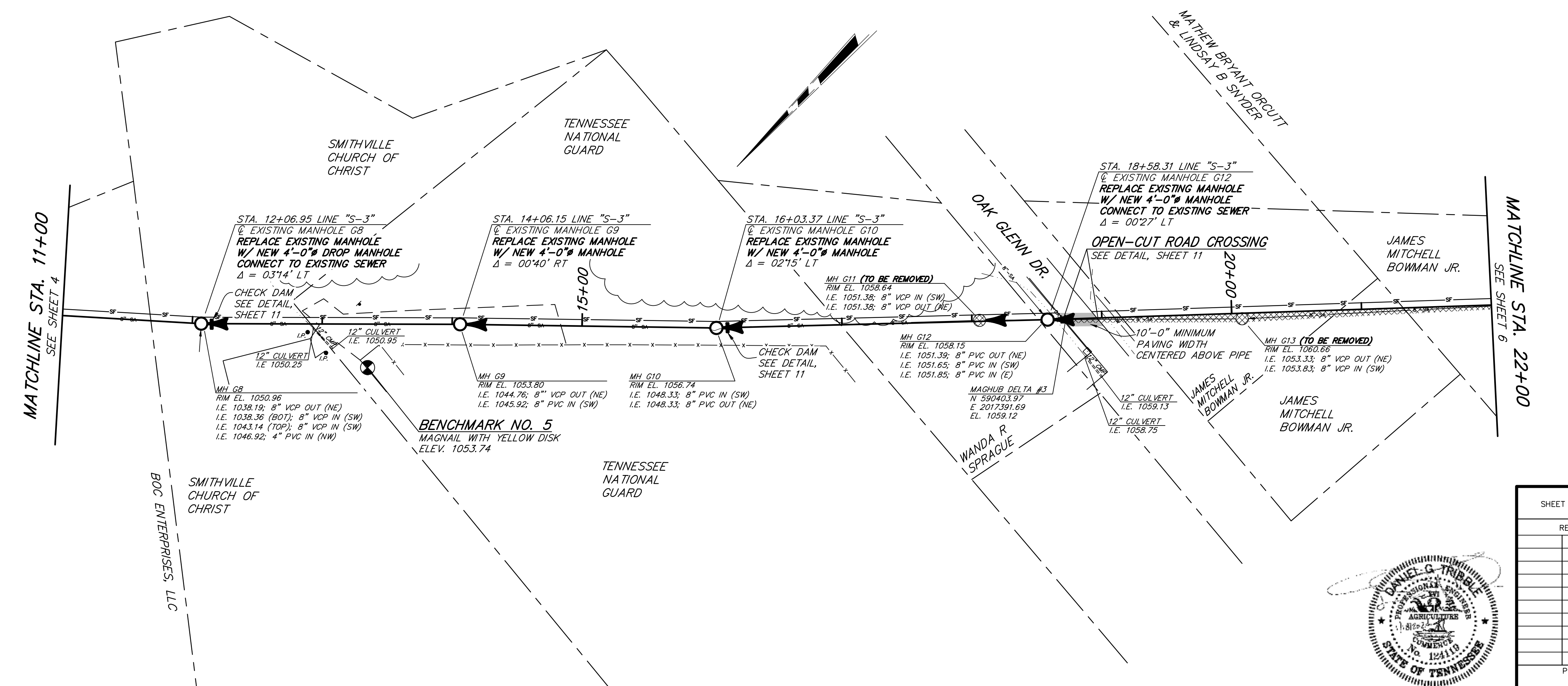


SHEET 4 OF 11		SEWER SYSTEM IMPROVEMENTS	
REVISION OR ISSUE		CONTRACT 23-01	
		SEWER SYSTEM REHABILITATION	
		SEWER LINE "S-3" - FOSTER ROAD	
		STA. 00+00 TO STA. 11+00	
		FOR	
		SMITHVILLE, TENNESSEE	
SCALE	1"=50'	DESIGNED	AMG
PROJECT NUMBER	2090	DRAWN	TAS
DATE	DEC. 2023	CHECKED	DGT



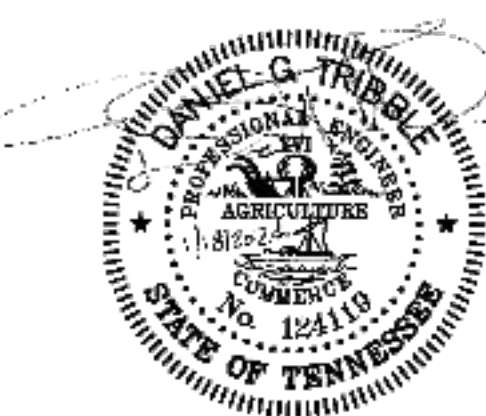
11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00

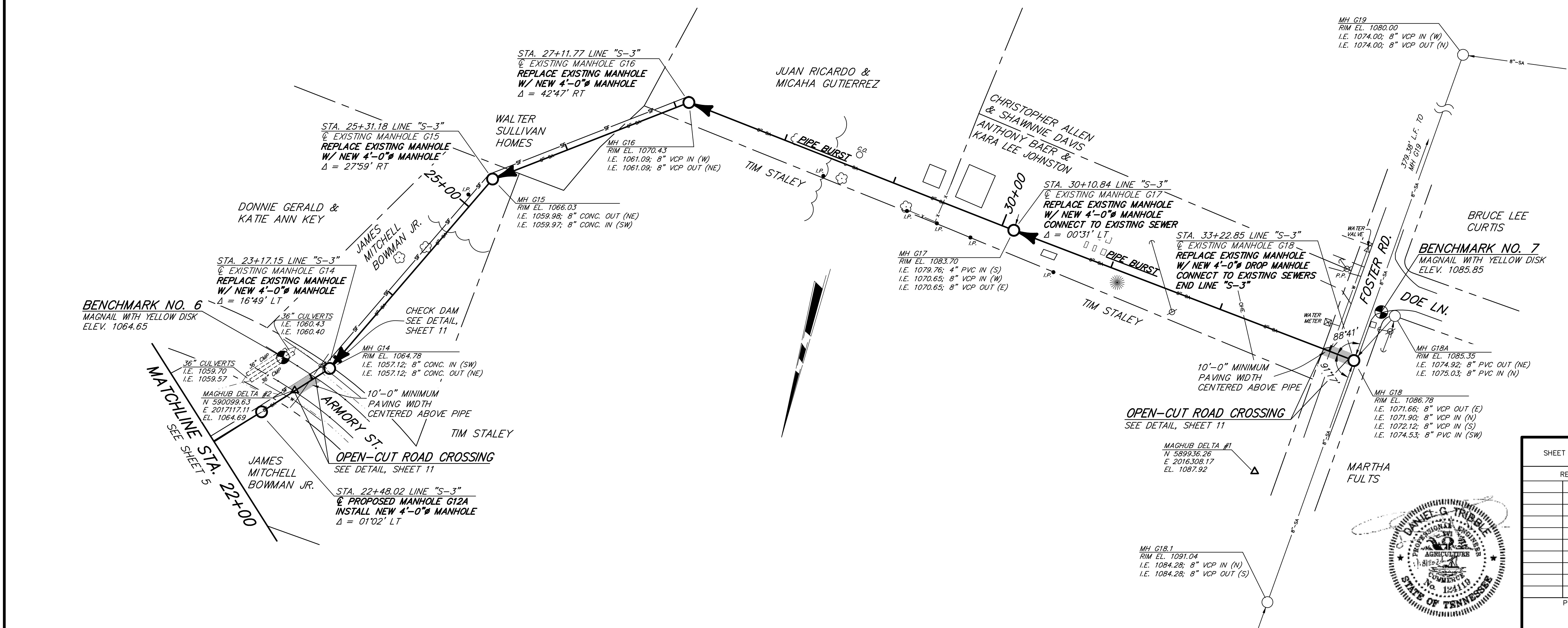
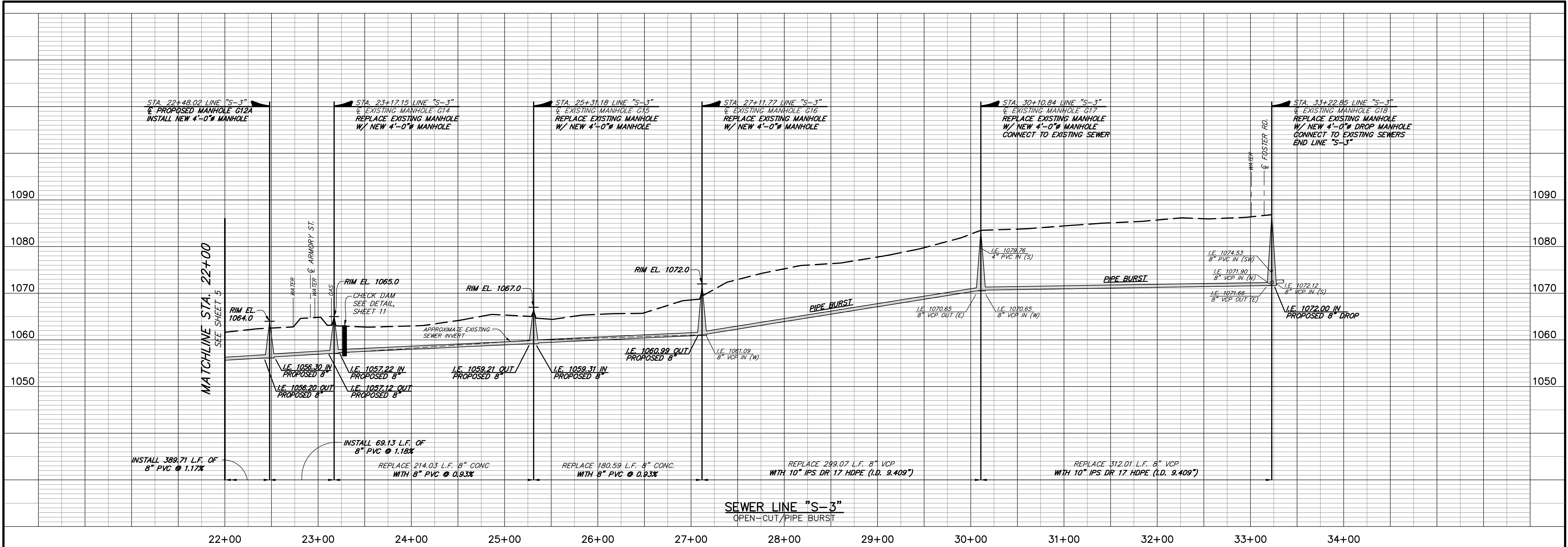
SEWER LINE "S-3"
OPEN-CUT REPLACE



- CONSTRUCTION NOTES:**
- SEE "GENERAL NOTES" AND "LEGEND", SHEET 1.
 - THE CONTRACTOR SHALL REPORT ANY ELEVATION DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES, PIPE TYPES, AND MANHOLE DEPTHS SHOWN ON THIS SHEET.
 - CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
 - THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AT EXISTING MANHOLES AND SEWER LINES TO REMAIN IN SERVICE AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.


SHEET 5 OF 11	SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION
REVISION OR ISSUE	SEWER LINE "S-3" - FOSTER ROAD STA. 11+00 TO STA. 22+00
FOR	SMITHVILLE, TENNESSEE
SCALE 1"=50'	DESIGNED AMG
PROJECT NUMBER 2090	DATE DEC. 2023
	CHECKED DGT

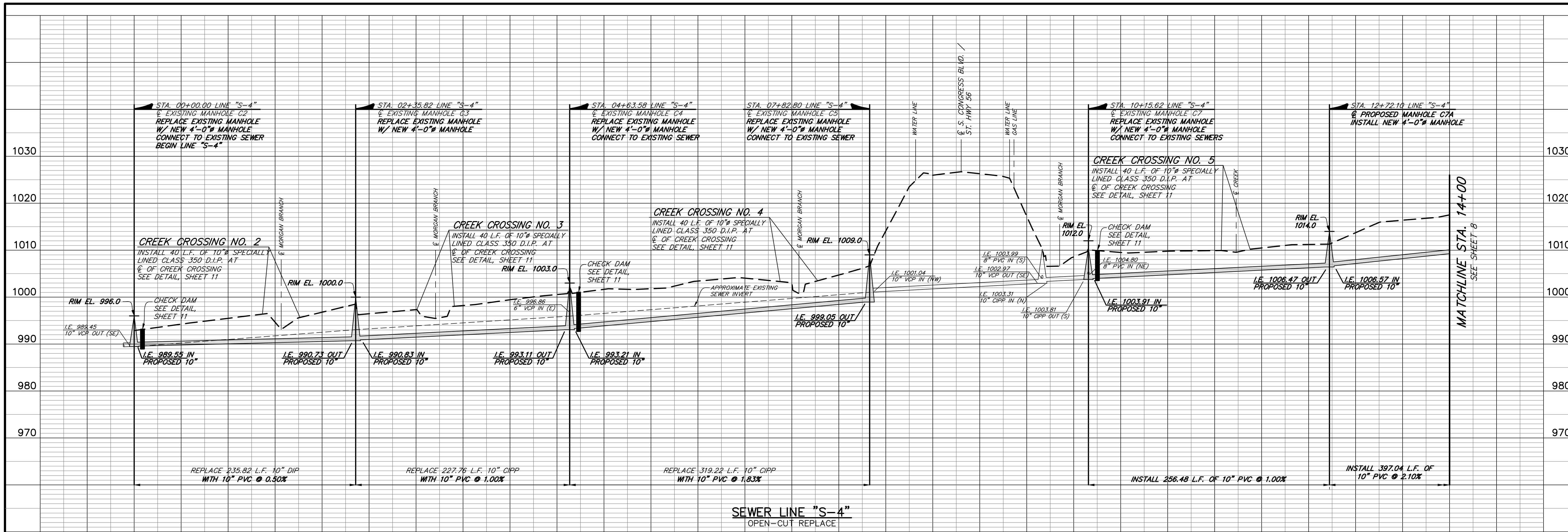




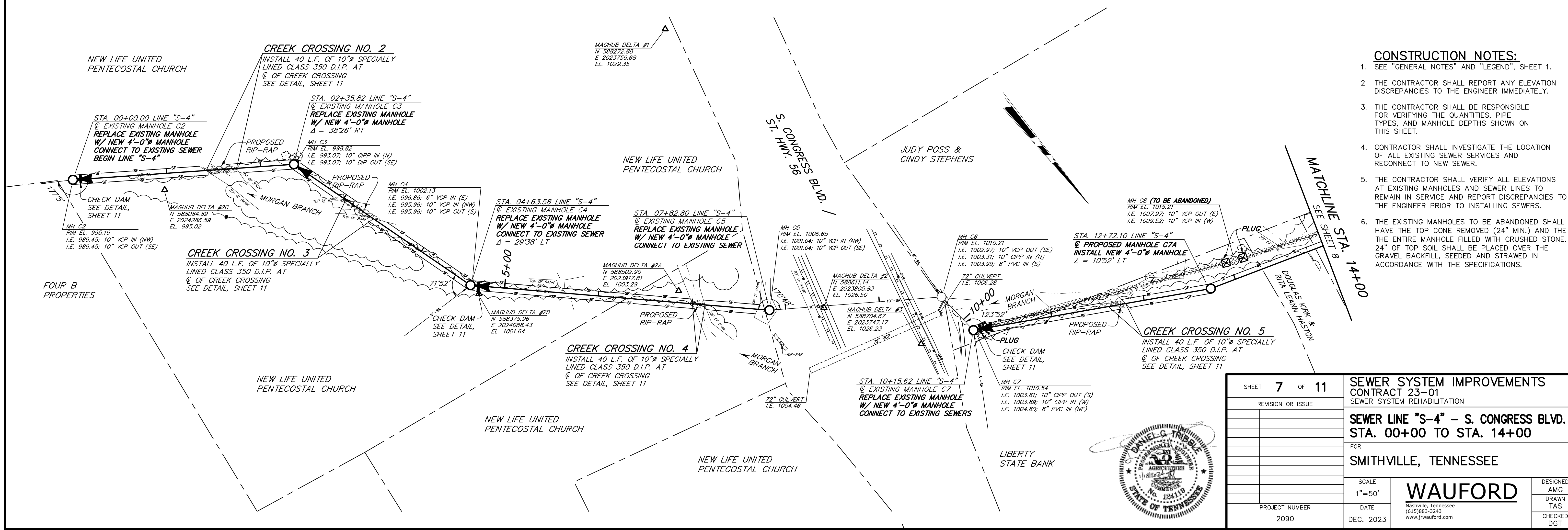
CONSTRUCTION NOTES:

1. SEE "GENERAL NOTES" AND "LEGEND", SHEET 1.
2. THE CONTRACTOR SHALL REPORT ANY ELEVATION DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES, PIPE TYPES, AND MANHOLE DEPTHS SHOWN ON THIS SHEET.
4. CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
5. THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AT EXISTING MANHOLES AND SEWER LINES TO REMAIN IN SERVICE AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.

SHEET 6 OF 11		SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION	
REVISION OR ISSUE		SEWER LINE "S-3" - FOSTER ROAD STA. 22+00 TO E.O.L.	
		FOR SMITHVILLE, TENNESSEE	
SCALE 1"=50'	DATE DEC. 2023	DESIGNED AMG DRAWN TAS CHECKED DGT	
PROJECT NUMBER 2090		 WAUFORD Nashville, Tennessee (615)883-3243 www.jrwauford.com	



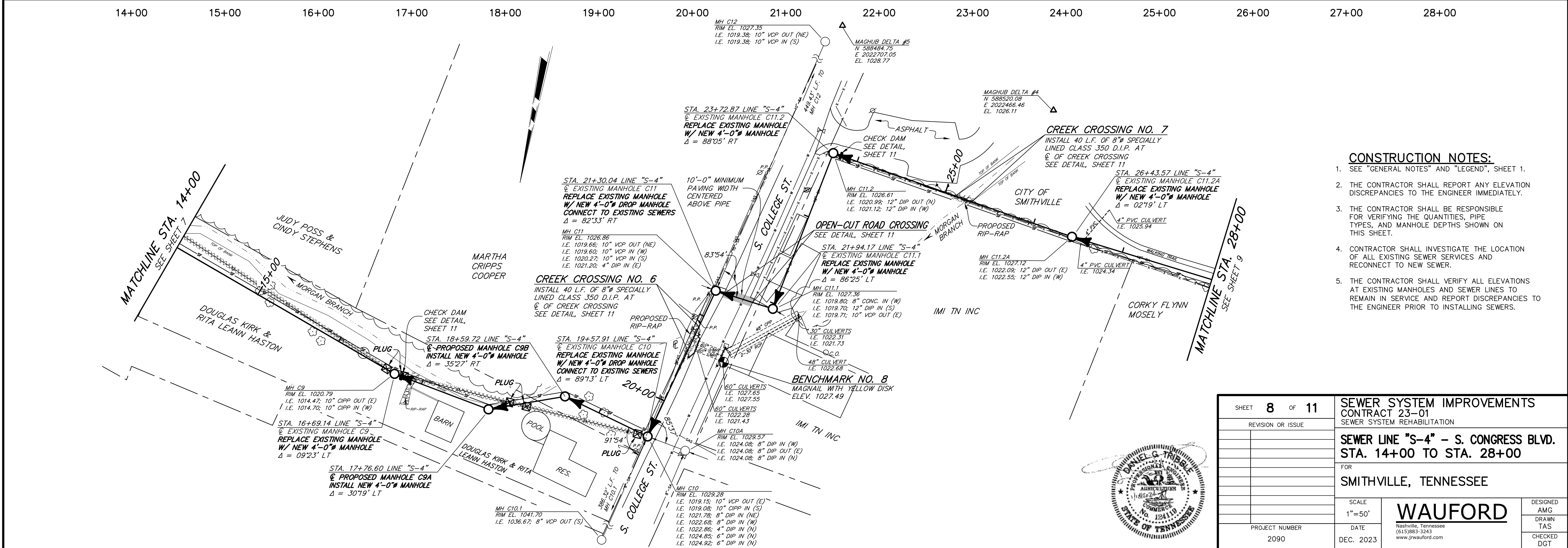
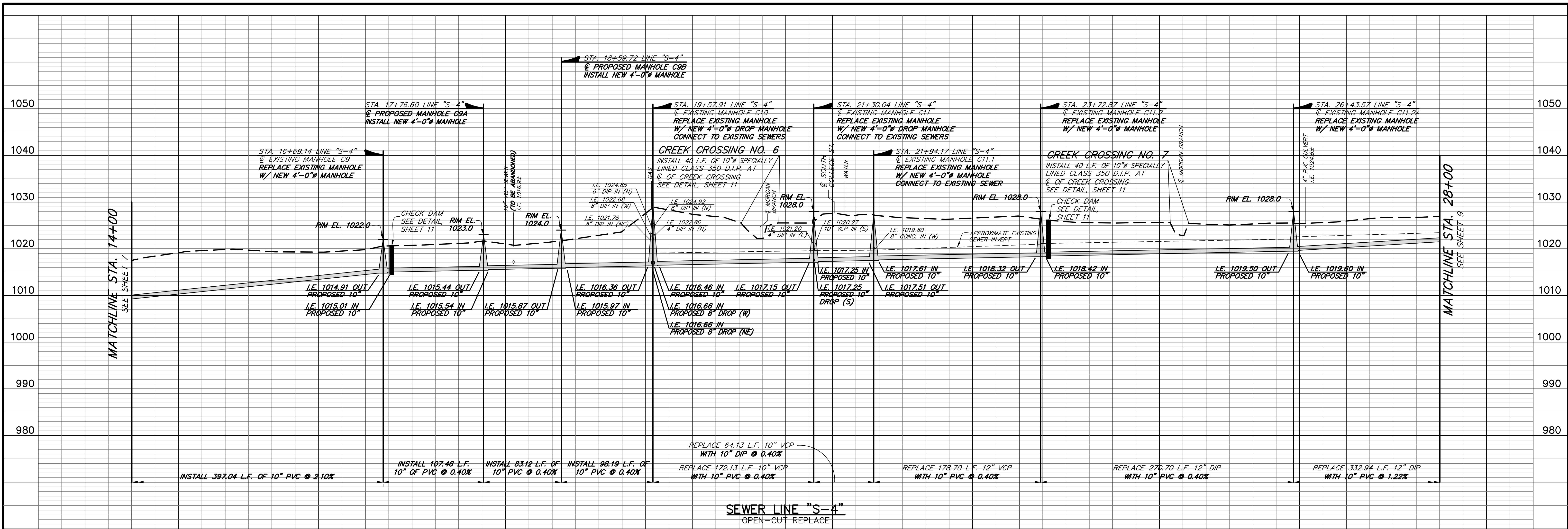
SEWER LINE "S-4"
OPEN-CUT REPLACE



- CONSTRUCTION NOTES:**
- SEE "GENERAL NOTES" AND "LEGEND", SHEET 1.
 - THE CONTRACTOR SHALL REPORT ANY ELEVATION DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES, PIPE TYPES, AND MANHOLE DEPTHS SHOWN ON THIS SHEET.
 - CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
 - THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AT EXISTING MANHOLES AND SEWER LINES TO REMAIN IN SERVICE AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.
 - THE EXISTING MANHOLES TO BE ABANDONED SHALL HAVE THE TOP CONE REMOVED (24" MIN.) AND THE ENTIRE MANHOLE FILLED WITH CRUSHED STONE. 24" OF TOP SOIL SHALL BE PLACED OVER THE GRAVEL BACKFILL, SEEDED AND STRAWED IN ACCORDANCE WITH THE SPECIFICATIONS.

SHEET 7 OF 11		SEWER SYSTEM IMPROVEMENTS	
REVISION OR ISSUE		CONTRACT 23-01	
		SEWER SYSTEM REHABILITATION	
		SEWER LINE "S-4" - S. CONGRESS BLVD.	
		STA. 00+00 TO STA. 14+00	
		FOR	
		SMITHVILLE, TENNESSEE	
SCALE	1"=50'	DESIGNED	AMG
DATE	DEC. 2023	DRAWN	TAS
PROJECT NUMBER	2090	CHECKED	DGT

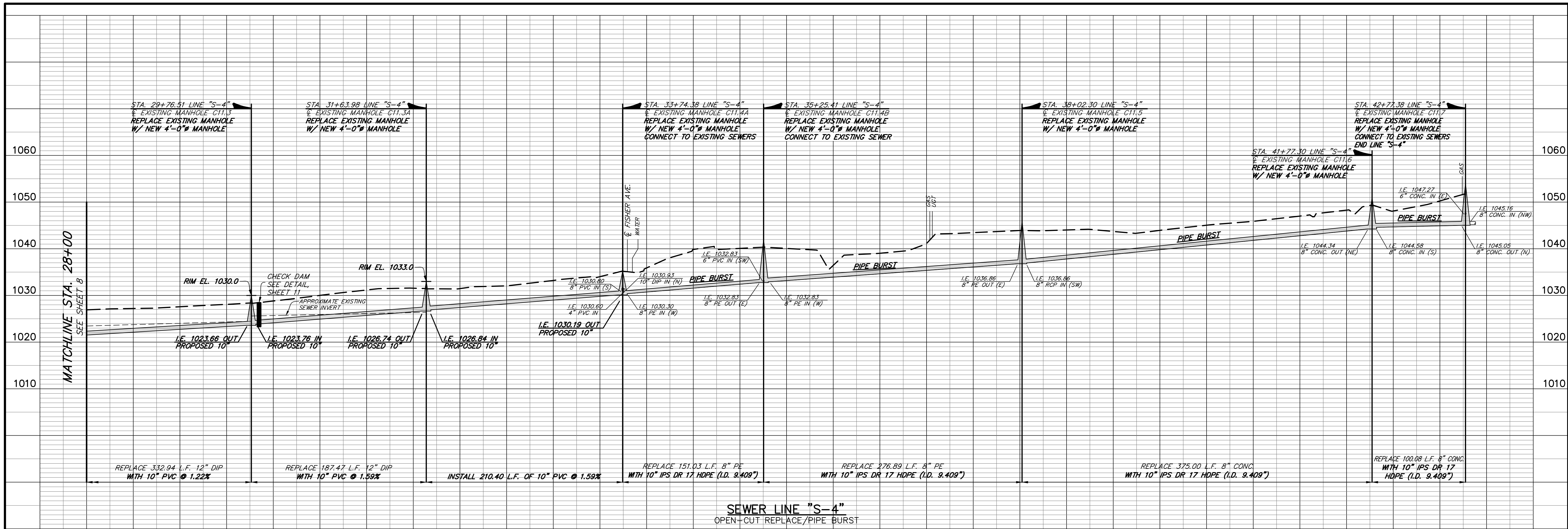




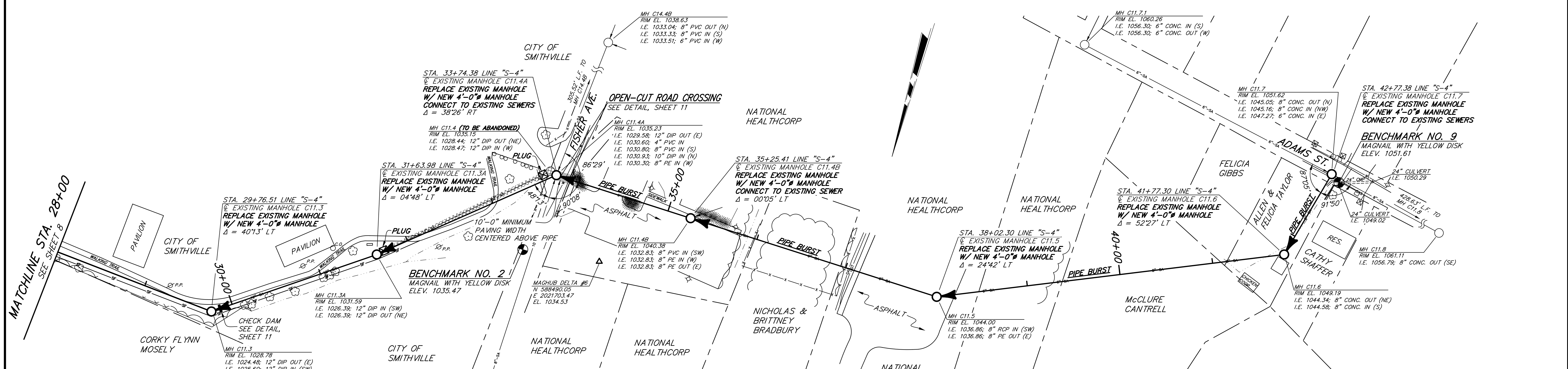
- CONSTRUCTION NOTES:**
1. SEE "GENERAL NOTES" AND "LEGEND", SHEET 1.
 2. THE CONTRACTOR SHALL REPORT ANY ELEVATION DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES, PIPE TYPES, AND MANHOLE DEPTHS SHOWN ON THIS SHEET.
 4. CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
 5. THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AT EXISTING MANHOLES AND SEWER LINES TO REMAIN IN SERVICE AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.

SHEET 8 OF 11	SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION
REVISION OR ISSUE	SEWER LINE "S-4" - S. CONGRESS BLVD. STA. 14+00 TO STA. 28+00
PROJECT NUMBER	FOR SMITHVILLE, TENNESSEE
SCALE	1"=50'
DATE	DEC. 2023
DESIGNED	WAUFORD
DRAWN	Nashville, Tennessee (615)883-3243 www.jwauford.com
CHECKED	TAS
DGT	





SEWER LINE "S-4"
OPEN-CUT REPLACE/PIPE BURST

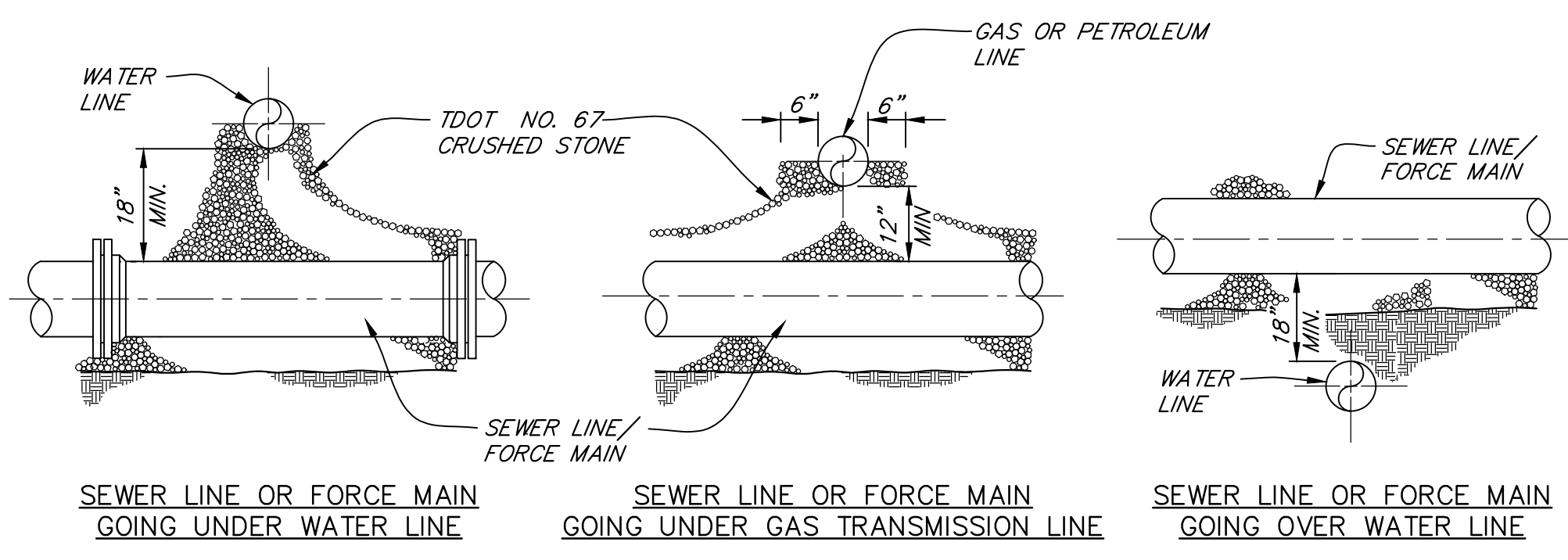


CONSTRUCTION NOTES:

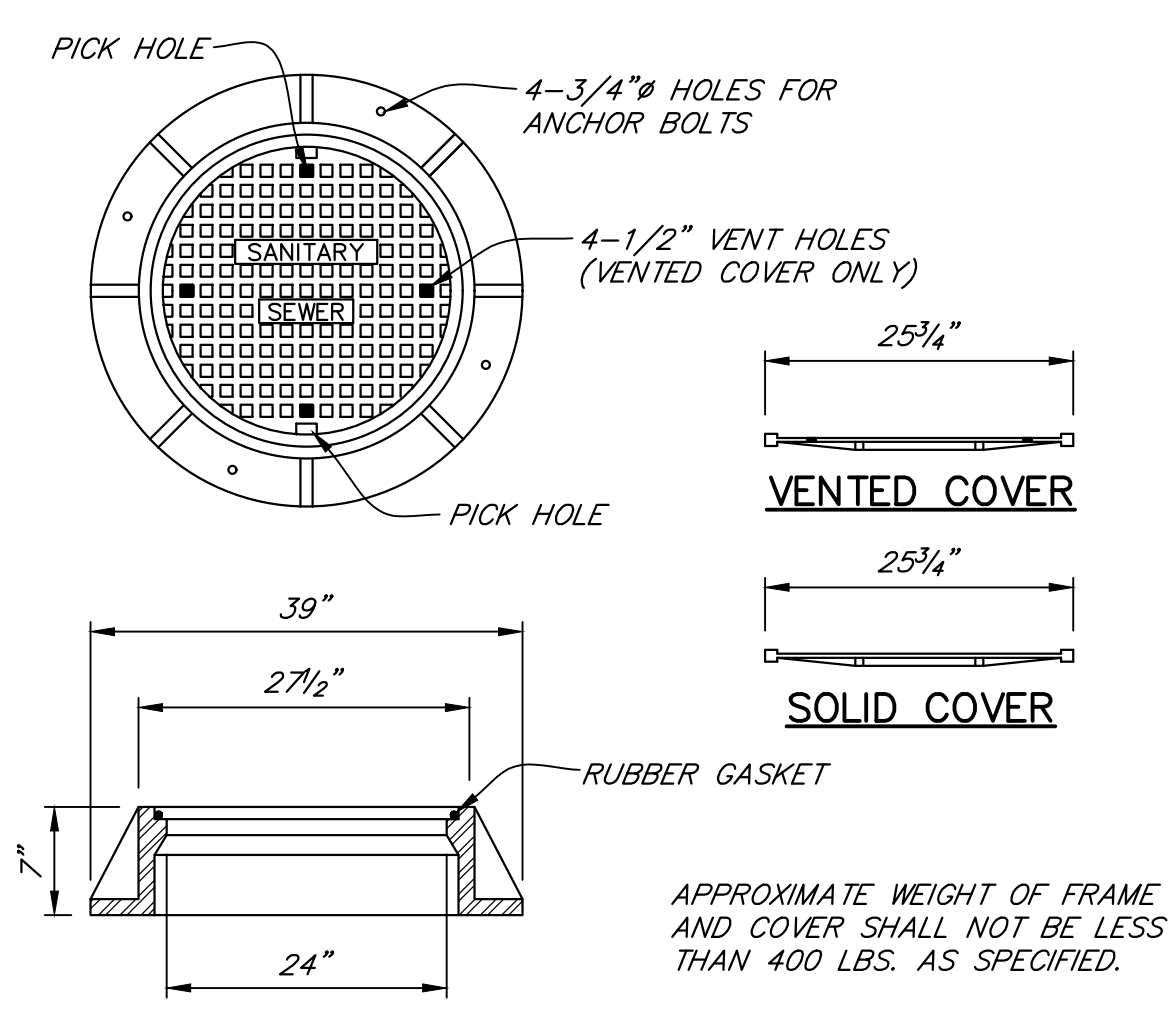
- SEE "GENERAL NOTES" AND "LEGEND", SHEET 1.
- THE CONTRACTOR SHALL REPORT ANY ELEVATION DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES, PIPE TYPES, AND MANHOLE DEPTHS SHOWN ON THIS SHEET.
- CONTRACTOR SHALL INVESTIGATE THE LOCATION OF ALL EXISTING SEWER SERVICES AND RECONNECT TO NEW SEWER.
- THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AT EXISTING MANHOLES AND SEWER LINES TO REMAIN IN SERVICE AND REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLING SEWERS.
- THE EXISTING MANHOLES TO BE ABANDONED SHALL HAVE THE TOP CONE REMOVED (24" MIN.) AND THE ENTIRE MANHOLE FILLED WITH CRUSHED STONE. BACKFILL AND FINAL TRAFFIC SURFACE SHALL BE PER DETAIL ON SHEET 11.



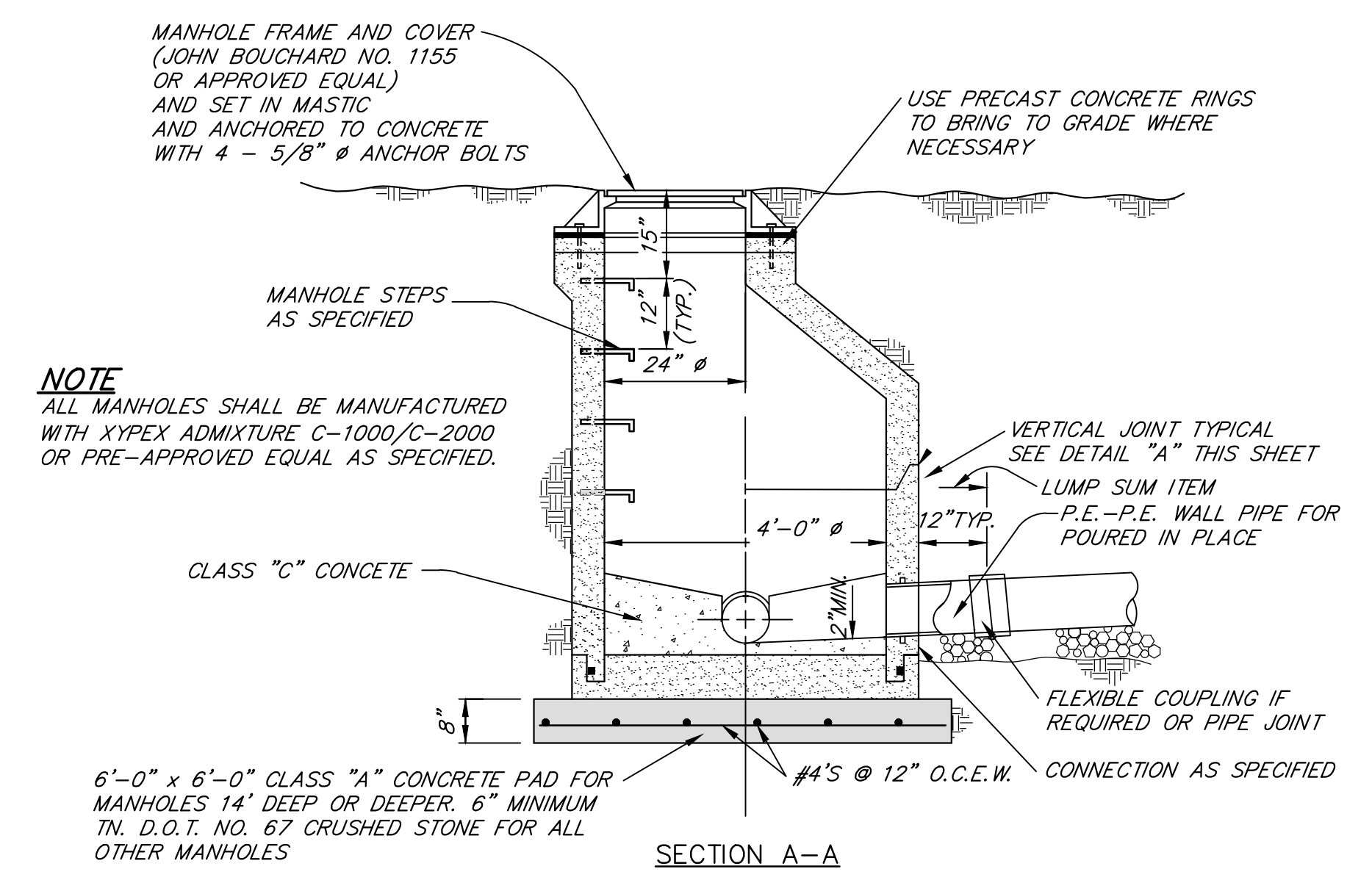
SHEET 9 OF 11	SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION
REVISION OR ISSUE	
SEWER LINE "S-4" - S. CONGRESS BLVD. STA. 28+00 TO E.O.L.	
FOR SMITHVILLE, TENNESSEE	
SCALE 1"=50'	WAUFORD Nashville, Tennessee (615)883-3243 www.jvwauford.com
PROJECT NUMBER 2090	
DATE DEC. 2023	DESIGNED AMG DRAWN TAS CHECKED DGT



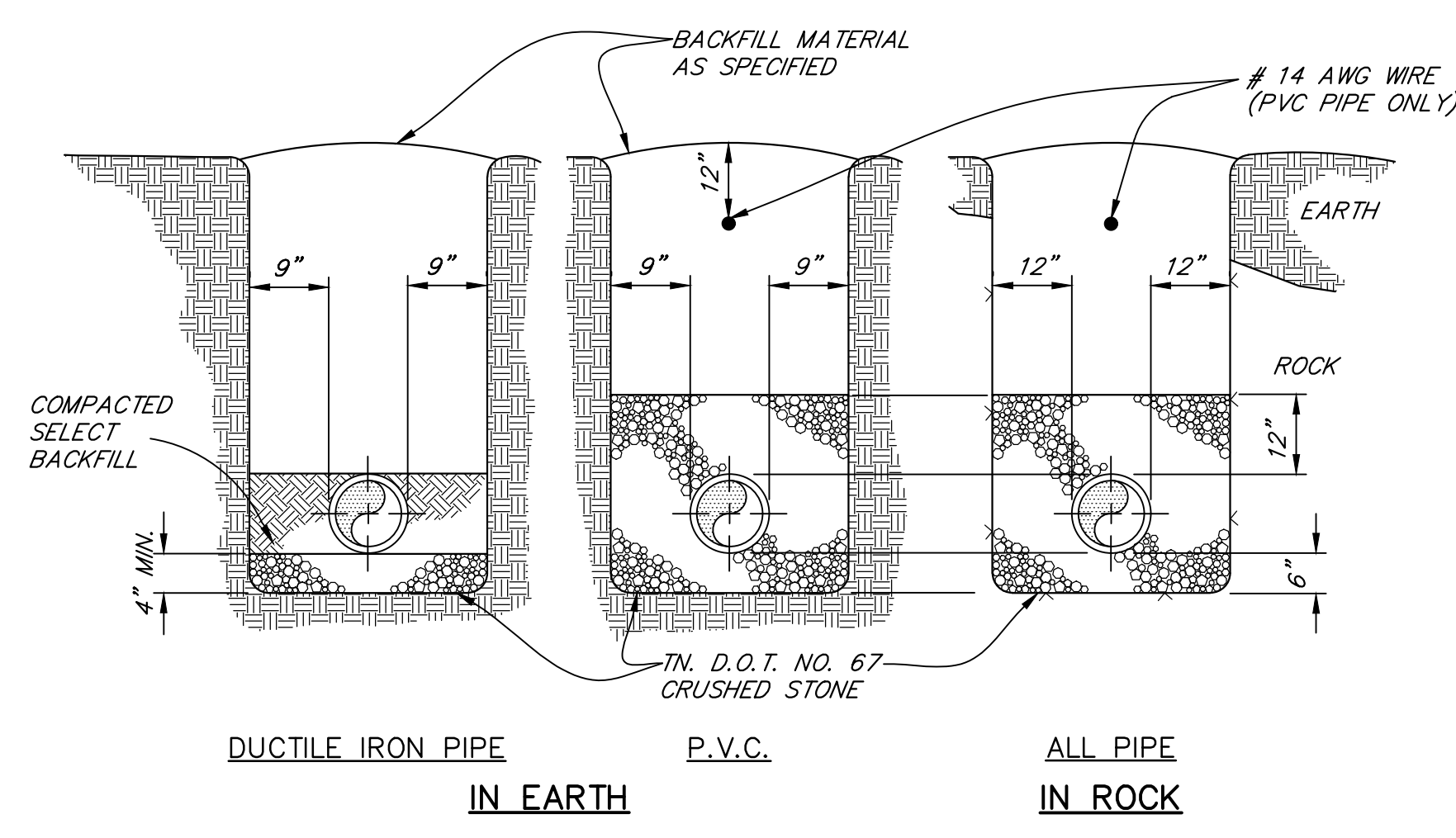
TYPICAL PIPE CROSSING



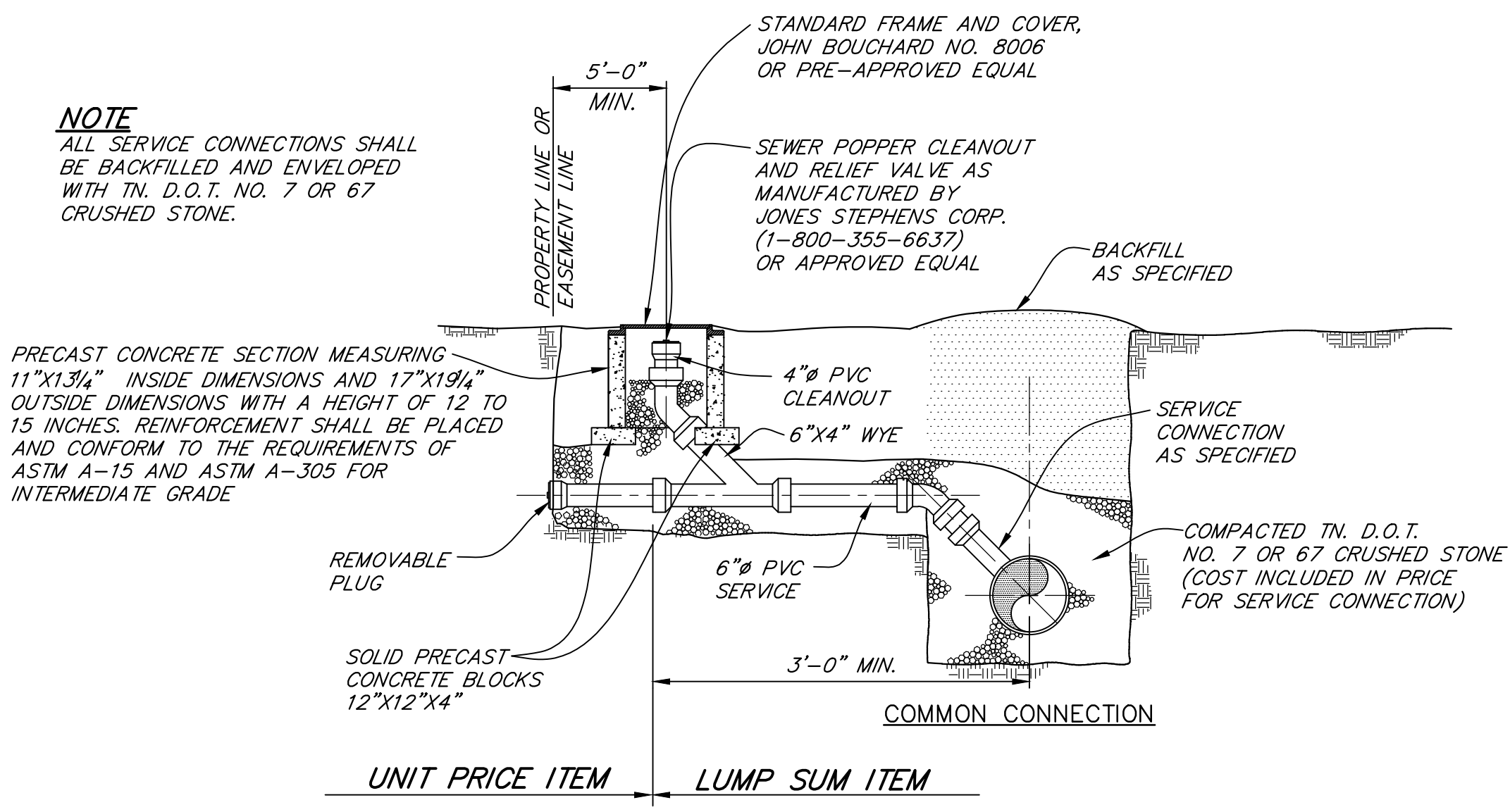
STANDARD MANHOLE FRAME & COVER
(SELF SEALING)



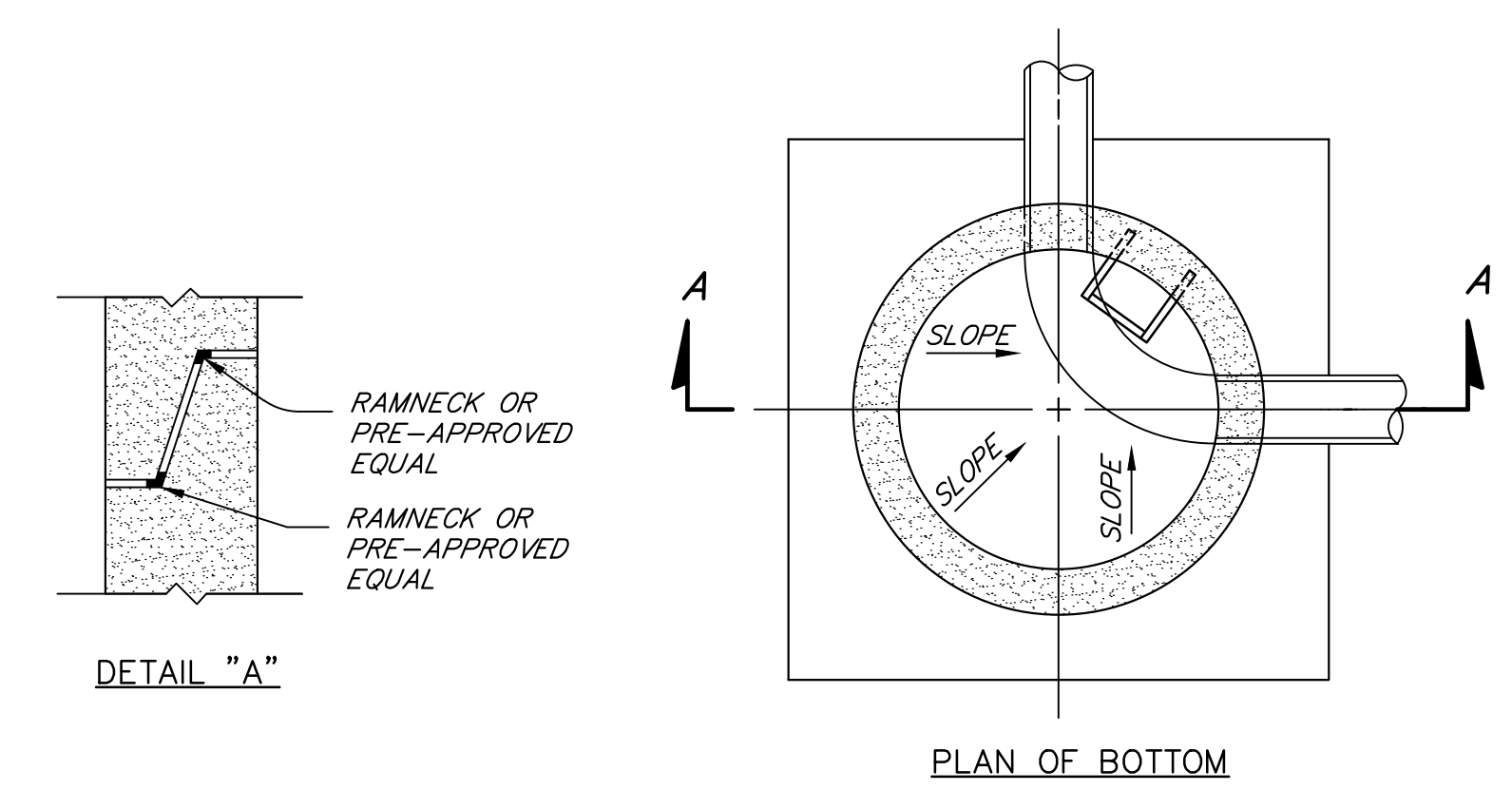
SECTION A-A



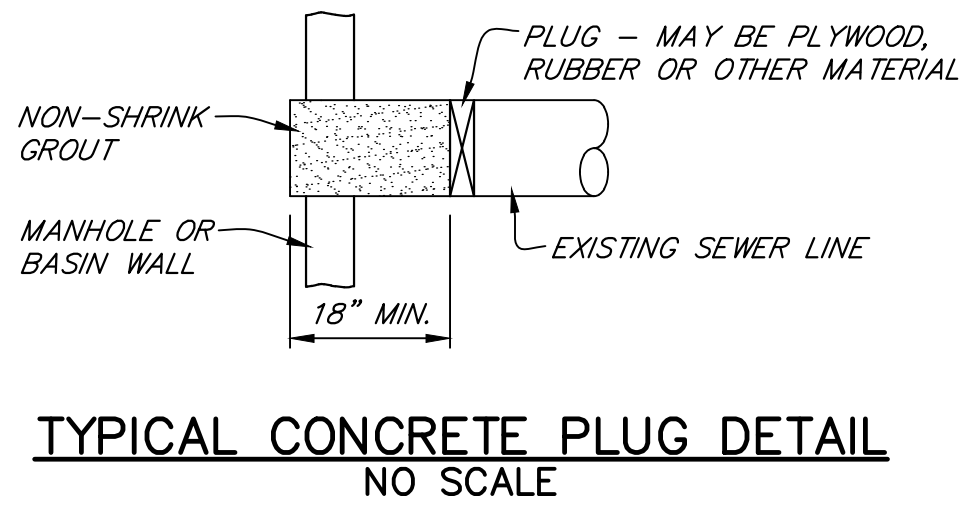
STANDARD SEWER LINE BEDDING



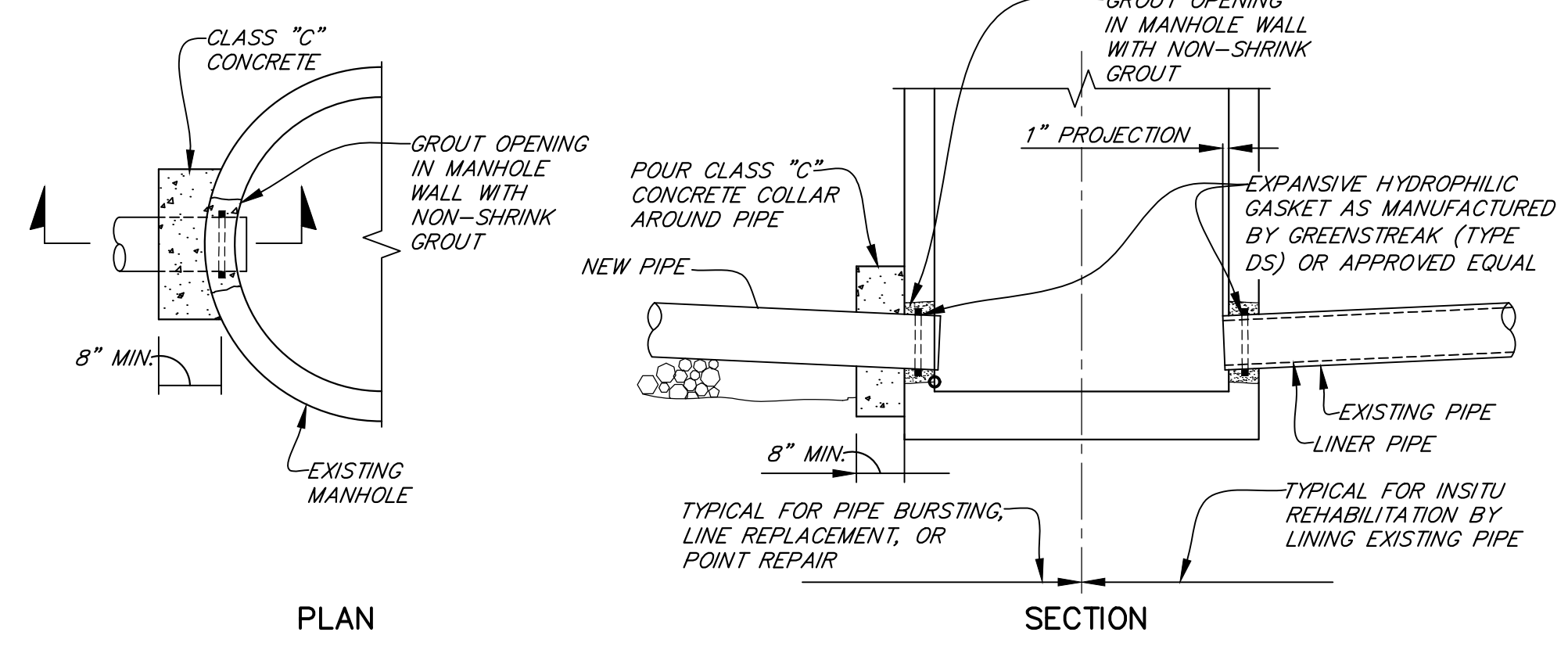
SERVICE CONNECTION DETAIL



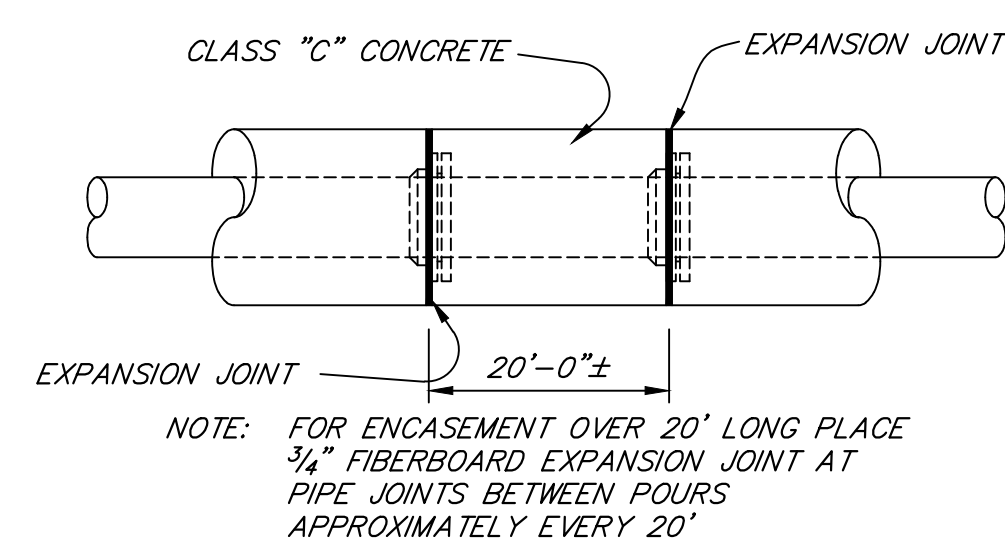
PRECAST MANHOLE DETAIL



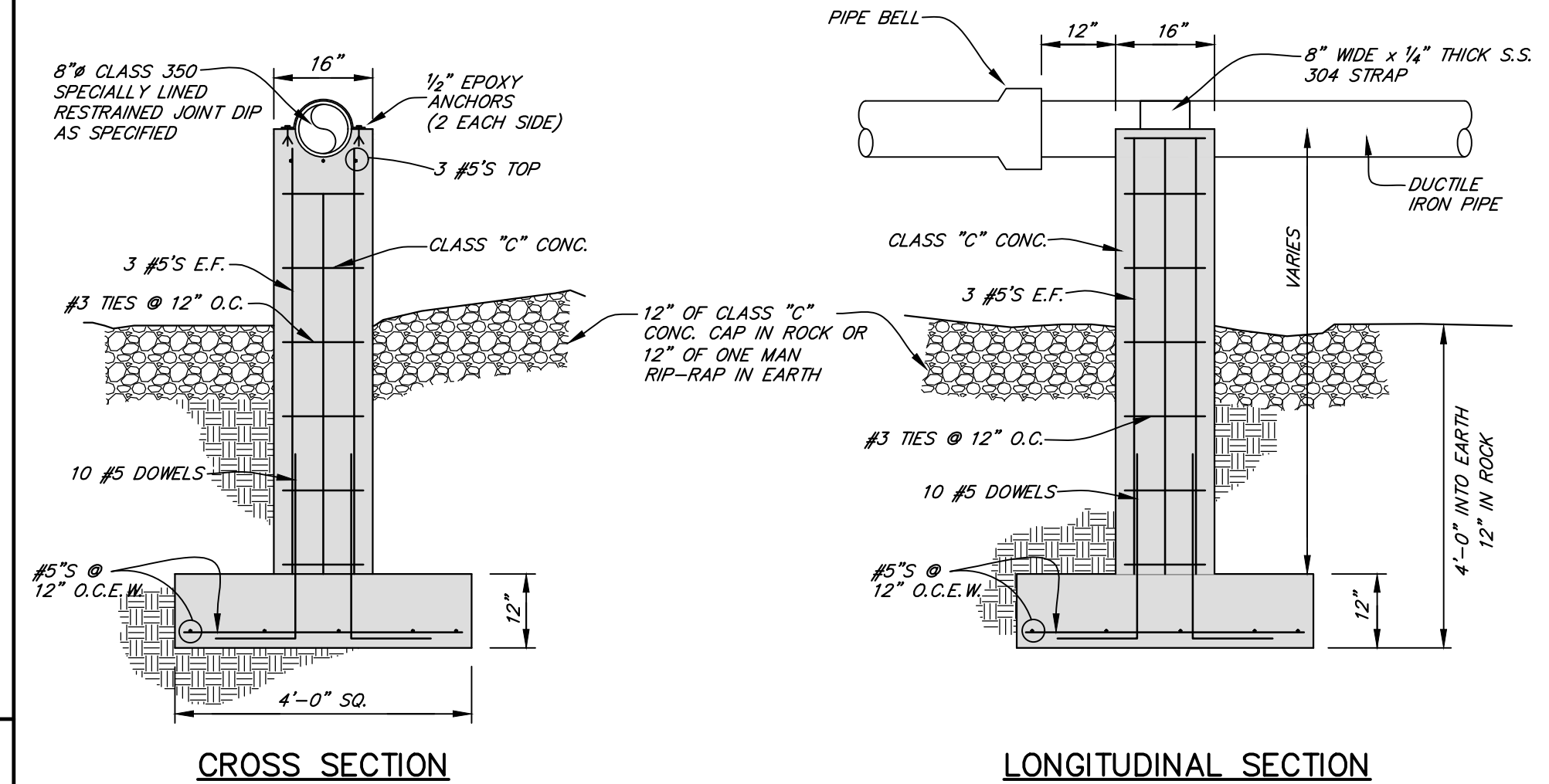
TYPICAL CONCRETE PLUG DETAIL
NO SCALE



EXISTING MANHOLE CONNECTION DETAIL



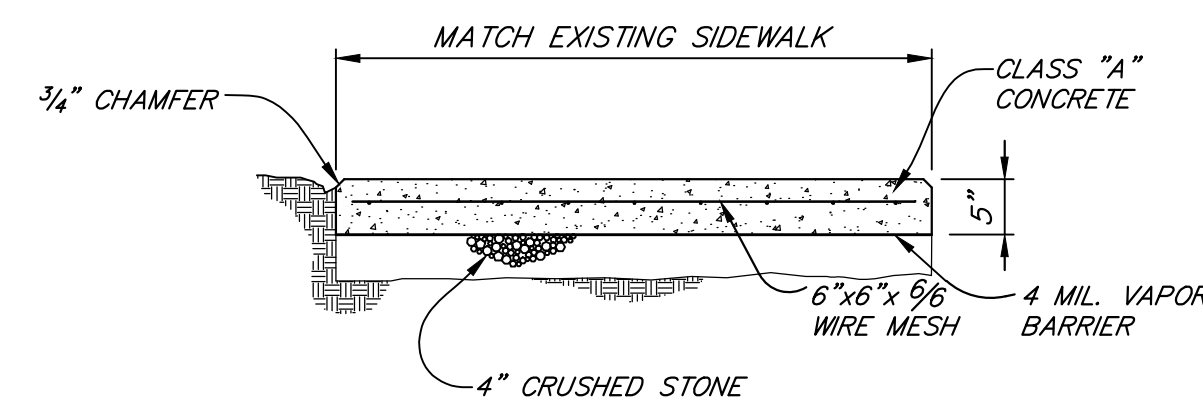
STANDARD CONCRETE ENCASEMENT



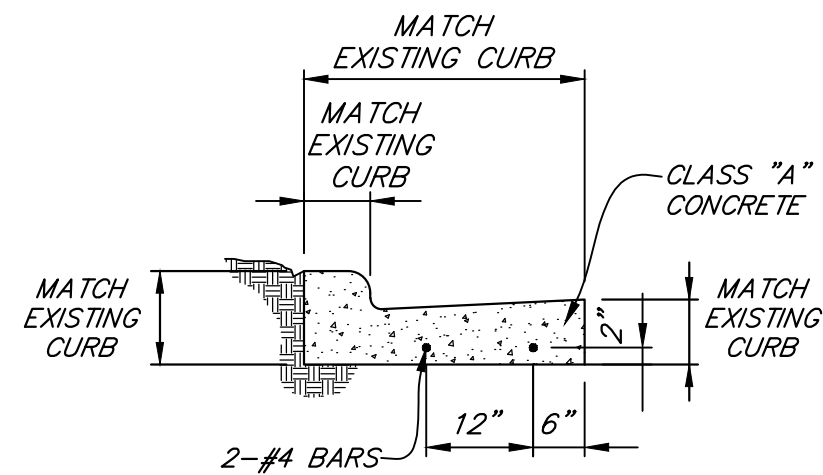
AERIAL CREEK CROSSING PIPE SUPPORT DETAIL
SCALE: 1/2"=1'-0"



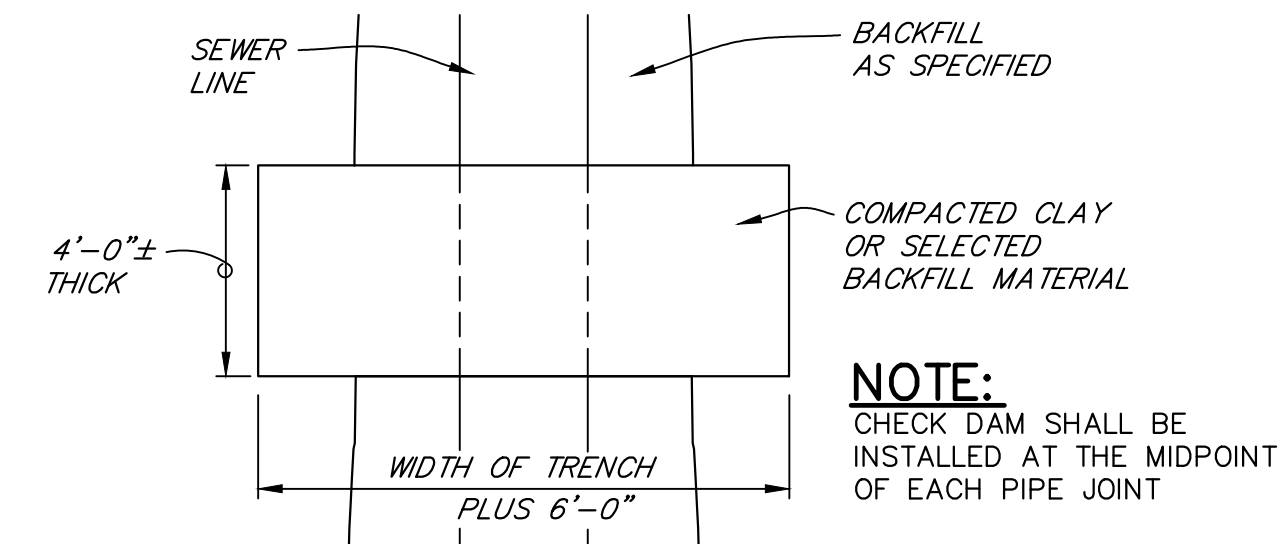
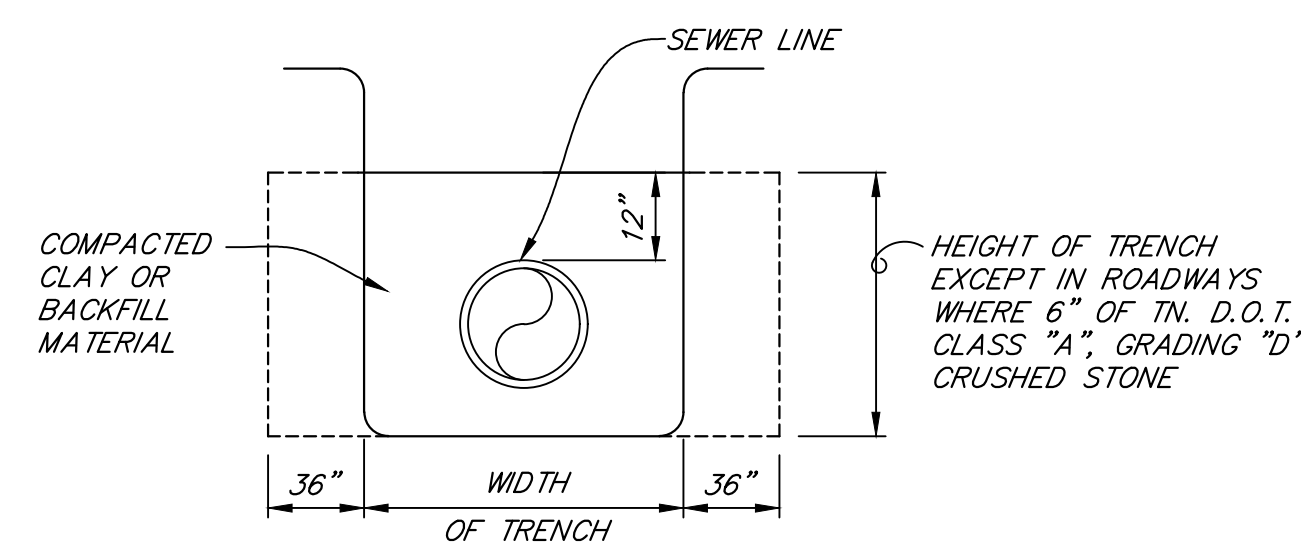
SHEET	10	OF	11	SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01 SEWER SYSTEM REHABILITATION
REVISION OR ISSUE				
DETAIL SHEET				FOR SMITHVILLE, TENNESSEE
SCALE AS SHOWN				
PROJECT NUMBER	2090	DATE	DEC. 2023	DESIGNED AMG DRAWN TAS CHECKED DGT



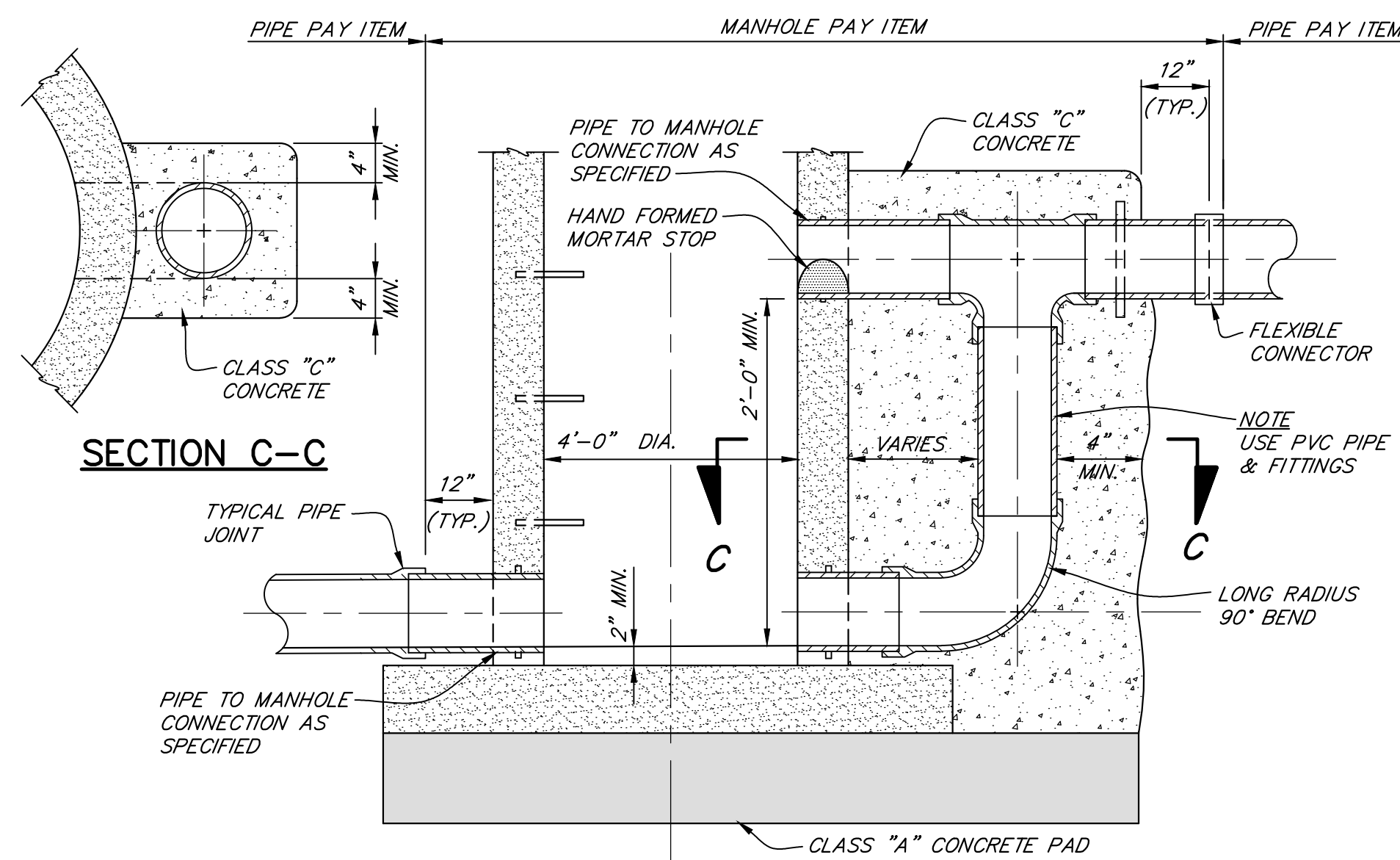
SIDEWALK REPLACEMENT DETAIL
NO SCALE



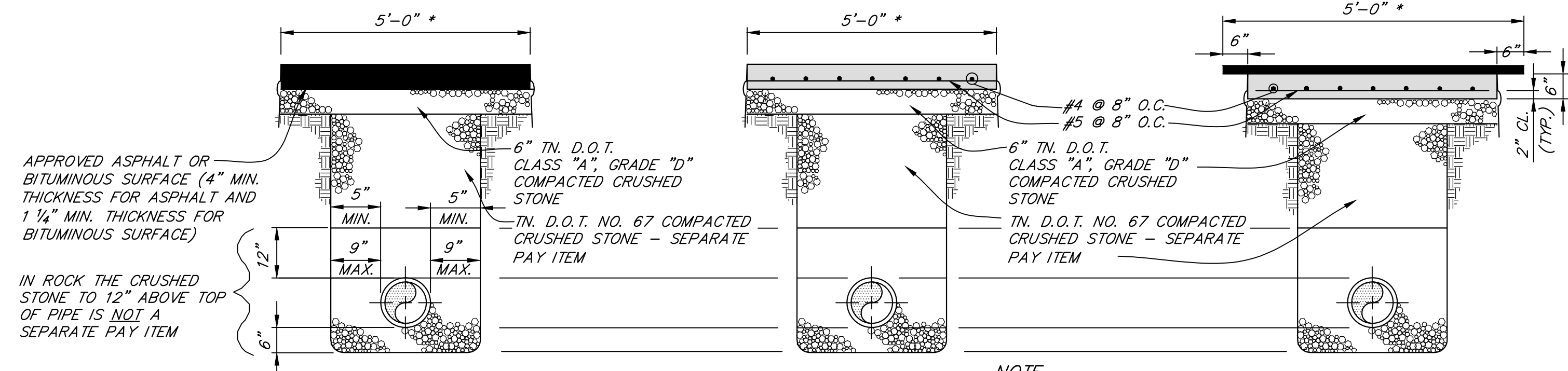
CURB REPLACEMENT DETAIL
NO SCALE



CHECK DAM DETAIL



STANDARD DROP MANHOLE ASSEMBLY EXTERIOR DROP



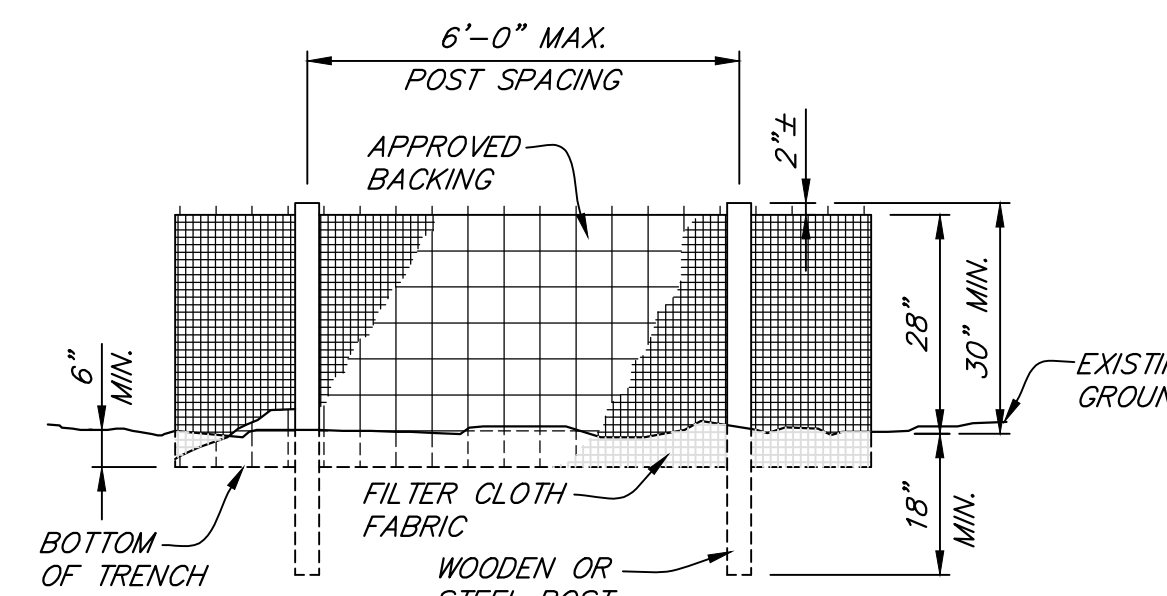
* MAXIMUM ALLOWABLE WIDTH OF PAVEMENT AND BASE COURSE REPLACEMENT FOR DETERMINATION OF PAY QUANTITIES UNLESS OTHERWISE SHOWN ON PLANS. THE CONTRACTOR SHALL REPLACE ALL OTHER DAMAGED PAVEMENT AT HIS OWN EXPENSE.

ASPHALT OR BITUMINOUS SURFACE

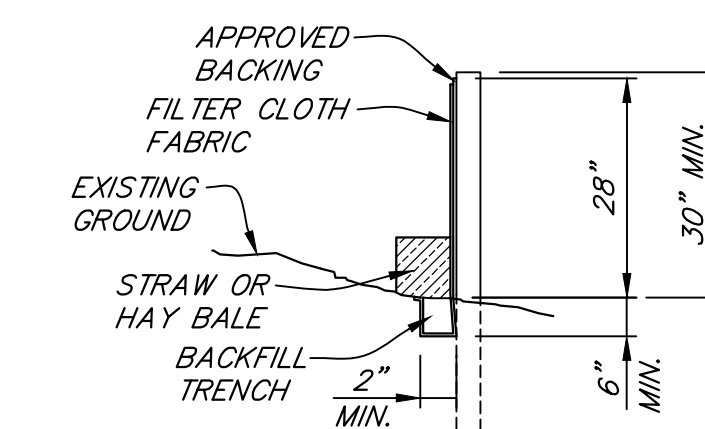
CONCRETE PAVEMENT

NOTE
CONCRETE SHALL BE CLASS "A"

BITUMINOUS SURFACE CONCRETE BASE



ELEVATION

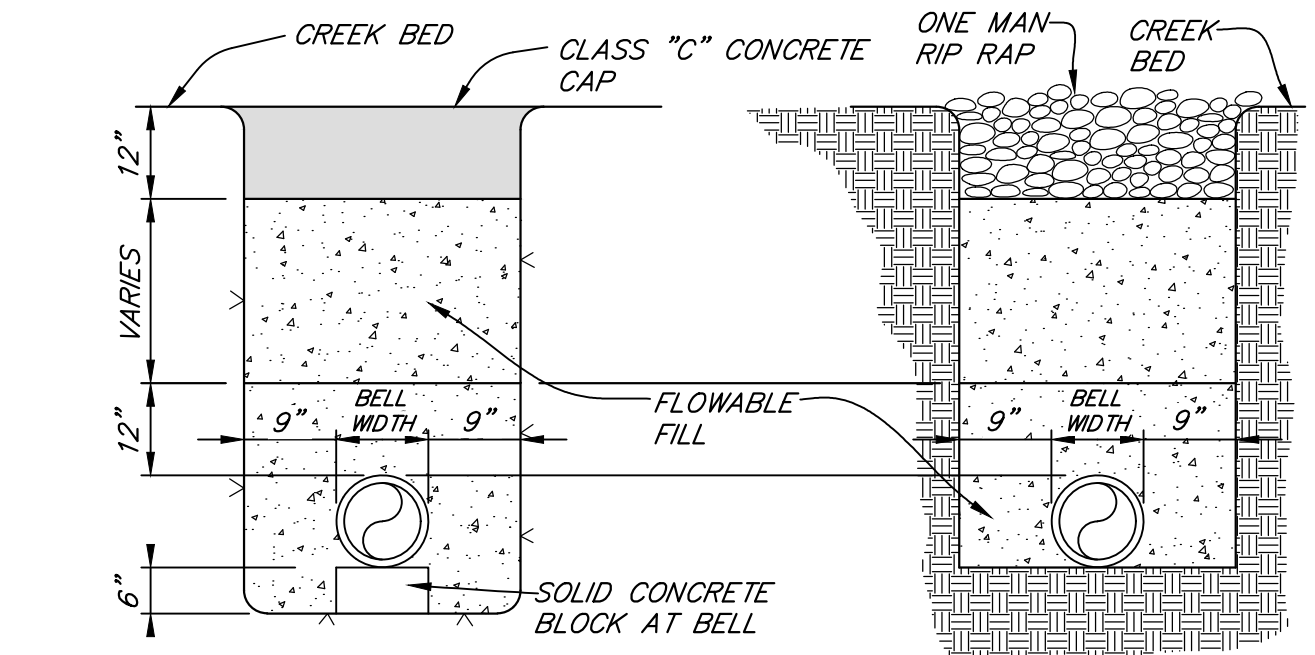


SECTION

NOTES:

1. FILTER CLOTH SHALL HAVE APPROVED BACKING OR A BUILT-IN REINFORCED STRUCTURE AS RECOMMENDED BY THE MANUFACTURER TO SUPPORT THE FILTER CLOTH.
2. A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED SILT FENCE.

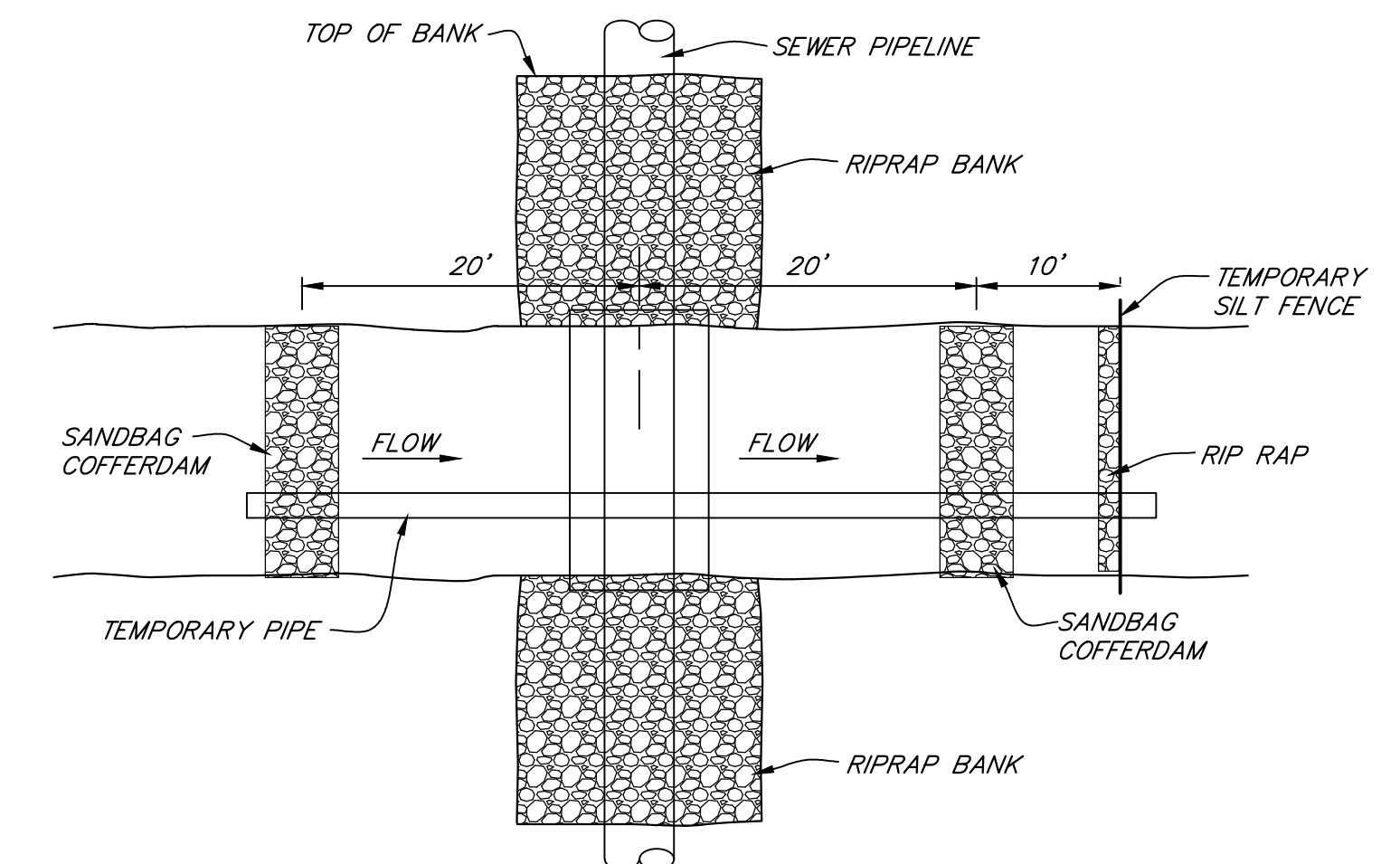
STANDARD TEMPORARY SILT FENCE



IN ROCK

IN EARTH

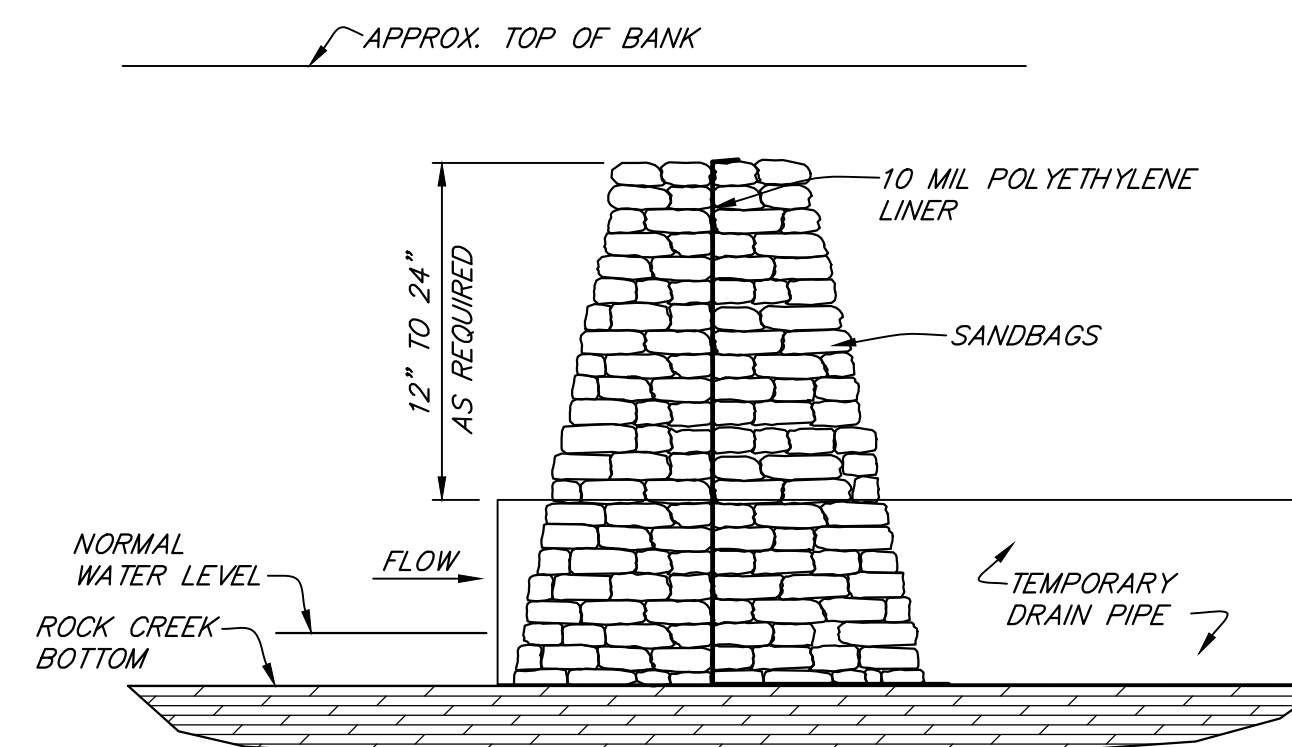
SECTION VIEW



PLAN VIEW

TYPICAL CREEK CROSSING

- SANDBAG COFFERDAMS**
1. COFFERDAMS CONSTRUCTED WITH SANDBAGS AND PLASTIC SHEETING SHALL BE PLACED ON EITHER SIDE OF THE PROPOSED PIPE CROSSING AND EXTENDED FROM BANK TO BANK TO PREVENT THE FLOW OF WATER INTO THE CONSTRUCTION AREA. A TEMPORARY DRAIN PIPE SHALL BE USED TO ALLOW WATER TO FLOW PAST THE CONSTRUCTION AREA WITHOUT IMPONDMENT.
 2. THE CONTRACTOR SHALL SIZE TEMPORARY BYPASS PIPING BASED ON ANTICIPATED FLOW DURING DRY OR WET WEATHER. THE CONTRACTOR SHALL PREPARE A PROPOSED SEQUENCE OF CONSTRUCTION AND PROPOSED PIPE SIZE FOR THE ENGINEER'S CONSIDERATION DURING SHOP DRAWING REVIEW.



SANDBAG COFFERDAM DETAIL



SHEET 11 OF 11	SEWER SYSTEM IMPROVEMENTS CONTRACT 23-01
REVISION OR ISSUE	SEWER SYSTEM REHABILITATION
DETAIL SHEET	
FOR SMITHVILLE, TENNESSEE	
SCALE AS SHOWN	WAUFORD
PROJECT NUMBER 2090	Nashville, Tennessee (615)883-3243 www.jwauford.com
DATE DEC. 2023	DESIGNED AMG DRAWN TAS CHECKED DGT