

City of Pearl, MS
Grandview Heights Sewer Rehabilitation
Pickering Firm, Inc. Project 18152.32

Plans, Specifications, and Contract Documents

TO: ALL PLANHOLDERS

FROM: Jonathan McLeod, PE

DATE: Monday, 6 March 2023

The Plans, Specifications, and Contract Documents for this Project shall be amended as follows:

ADDENDUM #2

BID FORM

1. Muck Excavation

Added Bid Item **Muck Excavation** – 1,500 CY

2. #57 Crushed Stone

Added Bid Item **#57 Crushed Stone** – 1,500 CY

3. Connection to Manholes

Added Bid Item: **21" Gravity Connection to Manhole** – 1 EA

Changed Quantity on Bid Item **12" Gravity Connection to Manhole** from 2 EA to 3 EA

4. Abandon Existing Manholes

Changed Quantity on Bid Item **Abandon Existing Manholes** from 17 EA to 18 EA

5. Miscellaneous Concrete

Changed Quantity on Bid Item **Miscellaneous Concrete** from 5 CY to 25 CY

***Revised Front End Documents & Bid Form are included with this addendum.**

PLANS & SPECIFICATIONS

1. Updated Specification Section 01025 Measurement and Payment to reflect changes to aforementioned Bid Items.

Revised Specification Section 01025 Measurement and Payment is included with this Addendum.

2. Roadway Repair/Asphalt Paving

This item consists of repair to Childre Road following open cut installation of gravity sewer; at a minimum, shall consist of 8" compacted crushed stone base and 4" surface course of asphalt to match existing grade.

3. Stored Materials

Deleted Part 2 Compensation from Specification Section 01611 Storage of Materials

4. Select Bedding

Select bedding changed to #57 crushed limestone.

Revised Specification Section 02731 Wastewater Gravity Mains is included with this addendum.

CLARIFICATIONS/QUESTIONS

1. Clearing and Grubbing

The full width of the perpetual easement should be cleared in its entirety, but the remaining construction easement may be cleared as necessary for construction up to the maximum width provided.

2. Manhole Lining

From Spec Section 02731 Wastewater Gravity Mains and Appurtenances, 2.04, A.4 – "manholes shall be precast with a crystalline waterproofing agent and the interior surface of all precast manholes lined with 24 mills, minimum, coal tar epoxy." The 24-mill coal tar epoxy lining is the required minimum for new manholes. A coating system that is in accordance with Spec Section 09885 Manhole Lining System may be substituted in lieu of coal tar epoxy. No additional payment will be made for such substitution.

The existing manholes designated to receive a lining system shall be in accordance with the Interior Surfacing Systems as specified in Spec Section 09885 Manhole Lining System.

3. Payment for stored materials

Payment may be claimed for materials stored on site in accordance with Spec Section 01611 Storage of Materials; the Contractor shall provide the Engineer with the corresponding materials invoice; final decision on payment for stored materials is at the discretion of the Engineer.

ITEMS IN CONFLICT WITH THIS ADDENDUM ARE HEREBY DELETED.

THIS ADDENDUM IS TO BE ACKNOWLEDGED BY THE BIDDER ON THE BID FORM.

Pickering Firm, Inc.



Jonathan McLeod, PE
6 March 2023



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CITY OF PEARL

ADVERTISEMENT FOR BIDS**GRANDVIEW HEIGHTS SEWER REHABILITATION
MCWI 37-CW-5.5**

Competitive sealed Bids for the GRANDVIEW HEIGHTS SEWER REHABILITATION, together with all appurtenances, will be received by the City of Pearl, at City Hall, located at 2420 Old Brandon Road, Pearl, MS 39208 or electronically at www.centralbidding.com until **10:00** O'clock A.M., local time, on the **9th** day of **March, 2023**; and then at said office publicly opened and read aloud.

In general, the project consists of **construction of approximately 3,800 linear feet of 21-inch gravity sewer and 2,600 linear feet of 12-inch gravity sewer and abandonment measures for existing gravity sewer.**

The "Information for Bidders," form of Bid, form of Contract, Plans and forms of Bid Bond, Performance Bond and Payment Bond and other Contract Documents may be examined at the following locations:

CENTRAL BIDDING FROM CENTRAL AUCTION HOUSE
www.centralbidding.com

JACKSON BLUEPRINT AND SUPPLY, INC.
699 MONROE STREET
JACKSON, MS 39202

Electronic downloadable bidding documents may be obtained from Central Bidding at www.centralbidding.com. They may also be obtained at the Office of Jackson Blueprint and Supply, Inc. For questions regarding printed sets and associated fees, or website registration, please contact Jackson Blueprint and Supply, Inc at (601) 353-5803. For information regarding electronic bid submittal process, contact Central Bidding at (225) 810-4814.

Partial sets of Bidding Documents will not be available. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than those listed herein.

Bids shall be submitted, sealed and deposited at the City of Pearl, office of the City Clerk, or shall be submitted at www.centralbidding.com prior to the hour and date above designated. For any questions concerning the electronic bidding process, please contact Central Bidding at (225) 810-4814.

Each Bidder must deposit with his Bid, a Bid Bond or Certified Check in an amount equal to five percent (5%) of his Bid, payable to City of Pearl as bid security. Bidders shall also submit a current financial statement if requested by the City.

Bidders must be qualified under Mississippi Law and show Certificate of Responsibility issued by the Mississippi State Board of Public Contractors. Each Bidder shall write his Certificate of Responsibility Number on the outside of the sealed envelope containing his Bid.

No Bidder may withdraw his Bid within Sixty (60) days after the actual date of the opening thereof.

The successful Bidder must provide both a Performance Bond and a Payment Bond (each in the amount of one hundred percent [100%] of the Contract) upon execution of the Contract.

The Contract Time is **360** calendar days with a liquidated damages provision of **Seven Hundred Fifty and 00/100 Dollars (\$750.00)** per calendar day thereafter.

The City of Pearl is utilizing Federal assistance for the construction of the project and is subject to U.S. Treasury's regulations governing ARPA, and all applicable terms and conditions in 2 C.F.R. Part 200; Bidders are hereby responsible for adhering to all applicable Federal Laws.

The City hereby notifies all Bidders that it will affirmatively insure that in any contract entered into pursuant to this notice, disadvantage, and women's business enterprises will be afforded the full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

The City of Pearl reserves the right to reject any and or all bids, waive technicalities, informalities, or irregularities in the bids received, solicit new bids, or to choose that bid which is deemed to be in the best interest of the City of Pearl.

Kelly Scouten
City Clerk

Publication Dates: February 9, 2023
 February 16, 2023

INSTRUCTIONS TO BIDDERS

1. DATE AND PLACE FOR OPENING OF BIDS

The date, time and place for opening Proposals will be as set forth in the published "Notice for Bids".

2. FORM OF BIDS

All Bids must be submitted on the forms furnished by the OWNER and the envelope containing the Bids must be sealed and addressed to:

**Attn: Kelly Scouten, City Clerk
City of Pearl
2420 Old Brandon Road
Pearl, MS 39208**

And designated as Bid for:

GRANDVIEW HEIGHTS SEWER REHABILITATION

BY _____

CERTIFICATE OF RESPONSIBILITY NUMBER _____

Each Bid must be accompanied by bid security in the amount of five percent (5%) of the Bid.

All bids submitted in excess of \$50,000 shall contain on the outside envelope of such bid, the Contractor's current Certificate of Responsibility Number issued by the Mississippi State Board of Public Contractors. No bid shall be opened or considered unless the Contractor's current certificate number appears on the outside of the envelope.

3. CERTIFICATE OF RESPONSIBILITY

Prior to filing Bids on public projects (in excess of \$50,000), the prospective Bidder must obtain a Certificate of Responsibility from the Mississippi State Board of Public Contractors establishing his classification as to the value and type of construction on which he is authorized to bid. Application must be submitted to the Mississippi Board of Public Contractors at least thirty (30) days prior to a regular Board meeting, scheduled to meet every quarter on the first Tuesday of January, April, July and October.

4. OMISSIONS AND DISCREPANCIES

Should a Bidder find discrepancies, errors or omissions in the Plans and Specifications, or should he be in doubt as to the correctness of the Plan details, dimensions and layout, he should immediately notify the Engineer in order to permit checking and any necessary revisions or modifications.

5. ADDENDA

Prior to the date set for opening of Bids, the right is reserved, as the interests of the OWNER may require, to revise or to amend the Contract Documents or Construction Drawings. Such revisions, if any, will be announced by an Addendum or Addenda, and copies of such Addenda will be furnished to all known Bidders for acknowledgement on the proposal form. If the revisions and Addenda are of a nature requiring material changes in quantities or prices bid, or both, the date set for opening Bids may be postponed to enable Bidders to revise their Bids. In such case, the Addendum, or Addenda will include an announcement of the new date for opening Bids.

6. INTERPRETATIONS

No oral interpretation made to any Bidder as to the meaning of the Plans and Specifications or Contract Documents shall be considered an effective modification of any of the provisions of the Contract Documents. Written request for interpretation of the Plans and Specifications shall be submitted to the Engineer for a formal decision that will be given in writing to all prospective Bidders. Contractor may request an interpretation of the plans and specifications by written request or by email. **NO** requests for interpretation will be accepted less than three (3) days prior to opening.

7. 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 of omission of any Bidder to examine any form, instrument or document shall in no way relieve any Bidder from obligation in respect to his Bid.

8. QUALIFICATION OF BIDDER

The OWNER may make such investigation as he deems necessary to determine the ability of the Bidder to perform the work and the Bidders 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. The OWNER will limit its evaluation of Bidders to the criteria listed in Instruction to Bidders, Article 10 below.

9. REJECTION OF PROPOSAL

Proposals may be rejected in the case of any omission, alterations of forms, additions or conditions not called for, unauthorized alternate Bids, incomplete Bids, erasures or irregularities of any kind. Proposals that contain erasures, changes, or alterations of any kind which are not initiated by the Bidder, may be classified as irregular.

Proposals received, conditioning their consideration or rejection upon Proposals for the other work submitted by the same Bidder may be classed as irregular, unless the Contract Documents specifically invite or permit conditional or combination Bids.

Proposals in which the prices obviously are unbalanced may be rejected.

10. METHOD OF AWARD - LOWEST AND BEST BIDDERS

Unless all Bids are rejected, the OWNER will award the Contract to the lowest and best, responsive, responsible Bidder in accordance with State and Federal law or regulations and in strict accordance with these "Instruction to Bidders" and the Bid Specifications.

In determining the responsiveness of the low Bidder, the OWNER shall consider the following factors: (1) completeness and regularity of the Bid form (2) a Bid form without excisions or special conditions; (3) a Bid form having no alternative Bids for any item, unless requested in the Technical Specifications; and (4) such other factors as may be considered under State law, Federal law or regulations.

In determining the responsibility of the lowest Bidder, the OWNER shall base items determination on the following factors: (1) Bidder maintains a permanent place of business; (2) Bidder has adequate plant equipment to do the work properly and within the time limit that is established; (3) Bidder has adequate financial status to meet his obligations contingent to the work; and (4) such other factors as may be allowable under State law, Federal law or regulations. The responsibility of the Bidder may also be based on experience with projects of like size and nature.

The bid proposal may contain alternates that may or may not be selected by the OWNER. The OWNER reserves the right to select or reject any alternates as it deems most advantageous. Prior to award, all bids submitted will be re-ordered with reference to and in light of the alternates ultimately selected and/or rejected by the OWNER. The lowest bid will be determined in accordance with the aforementioned re-ordering of the bids.

11. SECURITY FOR FAITHFUL PERFORMANCE

Simultaneously with his delivery of the Executed Contract, the Contractor shall furnish a Performance Bond and a Payment Bond each in the sum of one hundred percent (100%) of the Contract Amount as security for faithful performance of his Contract and for the payment of all persons performing labor on the project under his Contract and furnishing materials in connection with his Contract as specified in the Contract Documents. The surety on such Bonds shall be issued by a duly authorized surety company satisfactory to the OWNER.

12. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

The Bidder must agree to commence work on or before a date to be specified in the written "Notice to Proceed" of the OWNER and to fully complete the project within the Contract Time stated in the Bid Proposal. The Bidder must also agree to pay (as liquidated damages) the sum stated in the Advertisement for Bids and in the Bid Proposal for each consecutive calendar day thereafter as herein provided in Paragraph 17 of the General Conditions.

This is a calendar day contract. Each day that passes is a calendar day. There shall be no adjustment due to weather.

13. GENERAL INFORMATION

Bidders shall inform themselves and comply with all pertinent local regulations and ordinances, State and Federal laws, licenses and tax liability that may in any manner affect their Bids and the prosecution of the work. Compliance with local and State laws shall only be to the extent that such requirements do not conflict with Federal laws and regulations.

Special attention is directed to the rules and regulations published by the Mississippi State Tax Commission outlining certain taxes imposed on Contractors by the State of Mississippi.

14. CONDITIONS OF WORK

Each Bidder must fully inform himself of the conditions relating to the construction of the project and employment of labor thereon. Failure to do so will not relieve a successful Bidder of his obligation to furnish all materials and labor necessary to carry out the provisions of his Contract. Insofar as possible, the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.

15. INSURANCE

The Contractor will be required to carry the types and amount of insurance named in Article 27 of the General Conditions and any additional insurance requirements specified in the Supplementary Conditions for the full life of the Contract.

16. SUBCONTRACTORS

The Bidder is specifically advised that any person, firm or other party to whom it proposes to award a subcontract must be acceptable to the OWNER.

Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the OWNER.

17. SUBSURFACE DATA

Subsurface data shown on the Drawings or provided separately to the Bidder is made available for general information only. The subsurface data may be inadequate for the purpose of bidding on the Contract Items. Use of the information by Bidder implies an explicit waiver of liability on the part of the OWNER and the Consulting Engineer should any discrepancies later appear between the logs and the actual materials excavated during construction.

The making available of this subsurface data to prospective Bidders is not intended to relieve prospective Bidders from their responsibility to familiarize themselves with the subsurface conditions in accordance with Article 14 of the "Instructions to Bidders" and the submission of a Bid constitutes an agreement by the Bidder that he shall make no claim against the OWNER or its agents or employees because the subsurface data made available to prospective Bidders is not representative of the actual subsurface conditions.

18. ACCESS TO SITES

All fee simple sites, permanent easements and temporary easements shown on the drawings may not be acquired by the OWNER prior to completion of the Bidding Phase of the Project. If the Bidder desires to enter onto any proposed site or easement for the purpose of examining the surface and/or subsurface conditions thereon, then the Bidder shall first obtain written permission to do so from the legal owner of the property.

19. NON-RESIDENT CONTRACTOR

When a non-resident contractor submits a bid for a Mississippi public project, he shall attach thereto a copy of his resident state's current law pertaining to such state's treatment of non-resident contractors as required by House Bill Number 8580, Chapter Number 527, Laws of 1988 (Mississippi Code Annotated 31-3-21 (3)).

20. MODIFICATIONS TO BID

- A. **NO** modification may be written on the outside of the sealed envelope containing the bid.
- B. A facsimile (fax) modification will not be accepted.

21. BID WITHDRAWAL

Bids may be withdrawn by written request prior to opening. **NO** Bids may be withdrawn after the time of bid opening as stated in the Advertisement for Bids.

BID FORMPLACE: PEARL, MISSISSIPPI

DATE: _____

GRANDVIEW HEIGHTS SEWER REHABILITATION

Bid of _____

(hereinafter called "BIDDER") organized and existing under the laws of the State of _____ doing business as a _____.*

(* Insert "a Corporation", "a Partnership" or "an Individual" as applicable.)

TO: ATTN: City of Pearl
 2420 Old Brandon Road
 Pearl, MS 39208..... (hereinafter called "OWNER".)

GENTLEMEN:

The BIDDER, in compliance with your Invitation for Bids, having examined the Plans and Specifications with related documents and the site of the proposed work and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, supplies and to construct the Project in accordance with the Contract Documents within the time set forth therein and at the Unit Prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents of which this Proposal is a part.

The BIDDER further understands that the OWNER reserves the right to reject any or all Bids and waive informalities in the Bidding.

The BIDDER agrees that this Bid shall be valid and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving Bids.

Bidder understands that the quantities mentioned below are approximate only and are subject to either increase or decrease, and hereby proposes to perform any increased or decreased quantities of work at the Unit Price bid.

In accordance with the requirements of the Plans, Specifications and Contract Documents, Bidder proposes to furnish all necessary materials, equipment, labor, tools and other means of construction and to construct the Project in accordance with the Contract Documents within the specified Contract Time for the following Unit Prices:

(NOTE: Final amount are to be shown in **both** words and **figures**. In case of discrepancy, the amount shown in **words** will govern.)

Unit Prices shall include all labor, equipment, materials, bailing, shoring, removal,

overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

All erasures, changes or alterations of any kind must be initialed by the Bidder.

I. BASE BID

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Mobilization / Demobilization	LS	1		
2	Clearing and Grubbing	LS	1		
3	Erosion Control & SWPPP	LS	1		
4	12" Gravity Sewer (Open Cut)	LF	2610		
5	15" Gravity Sewer (Open Cut)	LF	60		
6	21" Gravity Sewer (Open Cut)	LF	3795		
7	48" Diameter Manhole (10' – 15' Depth)	EA	9		
8	48" Diameter Manhole (15' – 20' Depth)	EA	13		
9	48" Diameter Manhole (20' – 25' Depth)	EA	2		
10	Muck Excavation (FM)	CY	1,500		
11	#57 Crushed Stone (FM)	CY	1,500		
12	8" Gravity Connection to Manhole	EA	1		
13	12" Gravity Connection to Manhole	EA	3		

14	21" Gravity Connection to Manhole	EA	1		
15	Residential Service Line Reconnection	EA	1		
16	Abandon Existing Manhole	EA	18		
17	Manhole Lining	EA	2		
18	Seeding and Fertilizer	AC	12		
19	Solid Sodding	SY	100		
20	Miscellaneous Concrete	CY	25		
21	Roadway Repair / Asphalt Paving	SY	100		

II. BID SUMMARY

BASE BID

TOTAL BASE BID \$ _____

TOTAL BASE BID IN WORDS: _____

_____ Dollars

NOTE: The Bidder must bid any and all Alternates, if applicable. The City of Pearl reserves the right to select any, all, or none of the Alternates; whatever may be to the advantage of the City. The OWNER will award the Construction Contract to the lowest and best, responsive Bidder for the Base Bid plus selected Alternate(s), if any, unless the City elects to reject all bids. Reordering of the bids due to selection of Alternates is not the responsibility of the City.

Upon the receipt of written notice of acceptance of this Bid, the BIDDER will execute the formal Contract (attached) within ten (10) days and deliver the Surety Bonds and Certificates of Insurance as required by the General Conditions.

BIDDER hereby agrees to commence work under this Contract on or before a date to be specified in written "Notice to Proceed" of the OWNER and to fully complete the Project within **360** consecutive calendar days thereafter as stipulated in the Specifications. BIDDER further agrees to pay as liquidated damages the sum of **Seven Hundred Fifty and 00/100 Dollars (750.00)** for each consecutive calendar day thereafter as hereinafter provided in Paragraph 17 of the General Conditions.

The BID SECURITY attached in the sum of _____ DOLLARS (\$_____) is to become the property of the City of Pearl in the event the Contract and Contract Bonds are not executed within the time set forth as liquidated damages for the delay and additional expense to the City of Pearl.

BIDDER acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Respectfully submitted,

(Contractor)

BY: _____

(Business Address)

(SEAL - if Bid is by a Corporation)

Attachments:

BIDDER'S CORPORATE DECLARATION

(To be Filled in if BIDDER is a Corporation)

DATE: _____, 2023

Our Corporation is charted under the laws of the State of _____ and the names, titles and business addresses of the executives are as follows:

President

Secretary

Address

Address

Treasurer

Address

BID BOND

ALL MEN BY THESE PRESENTS, that we, undersigned, _____
_____ as Principal, and _____
_____ as Surety, are hereby held and firmly bound unto
the City of Pearl as OWNER, in the penal sum of _____
_____ Dollars, (\$ _____
_____) for the payment of which, well and truly to be made, we hereby jointly and severally
bind ourselves, successors and assigns.

Signed, this _____ day of _____, 2023.

THE CONDITION OF this obligation is such that whereas the Principal has submitted to the
OWNER a certain BID, attached hereto and hereby made part hereof to enter into a contract in
writing, for the _____

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (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 any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

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

Principal (L.S.)

Surety

By: _____
Attorney-in-Fact and Mississippi Resident Agent

(Typed Name and Address)

IMPORTANT: 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.

AGREEMENT

This AGREEMENT, made this the ____ Day of _____, 2023, by and between CITY OF PEARL, hereinafter called "OWNER" and _____, doing business as a Corporation, located in the hereinafter called "CONTRACTOR".

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

1. The CONTRACTOR will commence and complete the construction of **Grandview Heights Sewer Rehabilitation**, said project being more completely described in the Contract Documents and on the Construction Plans.

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within ten (10) calendar days after the date of the NOTICE TO PROCEED and will complete the same within **Three Hundred Sixty (360) calendar days** unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS. The CONTRACTOR further agrees to pay, as liquidated damages, the sum of **Seven Hundred Fifty and 0/100 Dollars (\$750.00)** for each consecutive calendar day thereafter as hereinafter provided in the Contract Documents.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of _____ Dollars (\$ _____), or as shown in the Bid Schedule.

5. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the Contract Documents.

6. The term "CONTRACT DOCUMENTS" means and includes (1) Advertisement for Bids, (2) Instructions to Bidders, (3) Contractor's Proposal, (4) Bid Bond, (5) this Agreement, (6) Payment Bond, (7) Performance Bond, (8) Grant General Conditions, (9) Special Conditions, (10) Technical Specifications, (11) Contract Drawings, (12) Notice of Award, (13) Notice to Proceed, (14) Addenda [if any], and (15) all subsequent Change Orders, Supplemental Agreements or other modifications to the Agreement.

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

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in six (6) counterparts, each of which shall be deemed an original on the date first above written.

CITY OF PEARL

BY: _____

BY: _____

ATTEST:

ATTEST:

(SEAL)

(SEAL)

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership of Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of OWNER)

(Address of OWNER)

hereinafter called OWNER, in the penal sum of _____
_____ Dollars, \$(_____)

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 the _____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

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.

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 _____ counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20____.

PRINCIPAL:**SURETY:**

BY _____ (s)

BY _____
(Attorney-in-Fact and Mississippi Resident Agent)

(Typed Name and Title)

(Typed Name)

(Address)

(Address)

ATTEST: _____
(Principal) SecretaryATTEST: *See Attached Power-of-Attorney*
(Surety) Secretary

SEAL

SEAL

(Witness as to Principal)

(Witness as to Surety)

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: 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.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership of Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of OWNER)

(Address of OWNER)

hereinafter called OWNER, in the penal sum of _____
Dollars, \$(_____)

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 the _____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, IF THE Principal shall well, truly and faithfully perform 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 during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, 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.

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 _____ counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20____.

PRINCIPAL:**SURETY:**

BY _____ (s)

BY _____

(Attorney-in-Fact and Mississippi Resident Agent)

(Typed Name and Title)

(Typed Name)

(Address)

(Address)

ATTEST: _____

(Principal) Secretary

ATTEST: See Attached Power-of-Attorney

(Surety) Secretary

SEAL

SEAL

(Witness as to Principal)

(Witness as to Surety)

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: 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.

CERTIFICATE OF SUFFICIENCY

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

I have examined the Agreement and Surety Bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid instruments 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 instruments on behalf of the respective parties named thereon; and that the foregoing instruments constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

(Signature)

(Date)

GENERAL CONDITIONS

The Contract conditions set forth hereinafter are general in scope and may contain requirements covering conditions that are not encountered in the performance of the work under this Contract. Where stipulations or requirements set forth herein apply to such unencountered conditions, such stipulations or requirements will have no meaning relative to the performance of the Work.

The titles and subheadings used in these General Conditions, as well as in other parts of these Contract Documents, are for convenience of reference only and shall not be taken or considered as having any bearing on the interpretation of the Contract Documents.

Specific terms contained in these Contract Documents shall be taken to import meaning with respect only to matters therein specifically set forth and shall not be construed as defining or limiting general terms or conditions contained in these Contract Documents irrespective of the relative position of the terms of this Contract.

1. DEFINITIONS

Wherever used in these Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

Addendum: Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Bidding documents or the Contract Documents.

Agreement: The written agreement between the OWNER and the Contractor covering the Work to be performed; other Contract Documents are attached to the Agreement.

Bid: The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bidder: Any person, firm or corporation submitting a Bid for the Work.

Bonds: Bid Bond, Performance Bond, Payment Bond and other instruments of security furnished by the Contractor and his Surety in accordance with the Contract Documents.

Change Order: A written order to the Contractor signed by the OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

Contract Documents: The Contract, including Advertisement for Bids, Instructions to Bidders, Bid, Bid Bond, Agreement, Payment Bond, Performance Bond, General Conditions, Special Conditions, Specifications, Drawings, Notice of Award, Notice to Proceed and all Addenda and Change Orders, if any.

Contract Price: The total monies payable to the Contractor under the Contract Documents.

Contract Time: The number of consecutive calendar days stated in the Agreement for the completion of the Work computed from the effective date stated in the Notice to Proceed.

Contractor: The person, firm or corporation with whom the OWNER has executed the Agreement.

Day: A calendar day or twenty-four (24) hours measured from midnight to the next midnight.

Drawings: The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by the Engineer and are referred to in the Contract Documents.

Engineer: The firm of PICKERING FIRM, INC. Consulting Engineers, Flowood, Mississippi.

Field Order: A written order issued by the Engineer which clarifies or interprets the Contract Documents or orders minor changes in the Work.

Modifications: (1) A written amendment of the Contract Documents signed by both parties, (2) a Change Order, (3) a written clarification or interpretation issued by the Engineer, or (4) a written order for a minor change or alteration in the Work issued by the Engineer.

A modification may only be issued after execution of the Agreement.

Notice of Award: The written notice by the OWNER to the apparent successful Bidder stating that upon compliance by the bidder with the conditions precedent to be fulfilled by him, within the time specified, the OWNER will execute and deliver the Agreement to him.

Notice to Proceed: A written notice given by the OWNER to the Contractor fixing the date on which the Contract Time will commence to run and on which the Contractor shall start to perform his obligations under the Contract Documents.

OWNER: A public body or authority, corporation, association, partnership or individual for whom the work is to be performed.

Resident Project Representative: The authorized representative of the Engineer who is assigned to the Project site or any part thereof.

Project: The entire construction to be performed as provided in the Contract Documents.

Shop Drawings: All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the work.

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.

Subcontractor: An individual, firm or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

Substantial Completion: The date as certified by the Engineer when the construction of the Project or a specified part thereof is sufficiently completed in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it was intended; or, if there be no such certification, the date when final acceptance by the OWNER is made in accordance with the Contract Documents.

Suppliers: Any person, supplier or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

Work: Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by the Contractor under the Contract Documents, including all labor, materials, equipment and other incidentals and the furnishing thereof.

2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

The Contractor will be furnished additional instructions and detail drawings as necessary to carry out the work included in the Contract.

The additional drawings and instructions thus supplied to the Contractor will coordinate with the Contract Documents and will be so prepared that they can be reasonably interpreted as part thereof. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions. The Contractor will prepare: (1) a schedule, fixing the dates at which special detail drawings will be required, such drawings, if any, to be furnished by the Engineer in accordance with said schedule; and (2) a schedule fixing the respective dates for the submission of Shop Drawings, the beginning of manufacture, testing and installation of material, supplies and equipment, and the completion of the various parts of the Work; each such schedule to be subject to change from time-to-time in accordance with the progress of the Work.

3. MATERIALS, SERVICE AND FACILITIES

It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the Work within the specified time.

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

4. CONTRACTOR'S TITLE TO MATERIALS

No materials or supplies for the Work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has

good title to all materials and supplies used by him in the Work, free from all liens, claims or encumbrances.

5. INSPECTION AND TESTING OF MATERIALS

All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be either selected or approved by the OWNER.

Materials of construction (particularly those upon which the strength and durability of the structure may depend) shall be subject to inspection and testing to establish conformance with Specifications and suitability for uses intended.

6. "OR EQUAL" CLAUSE

Whenever a material, article or piece of equipment is identified on the Plans or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard; and , any material, article or equipment or other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article or equipment so proposed is, in the opinion of the Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.

7. PATENTS

The Contractor shall hold and save the OWNER and its officers, agents, servants and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article or appliance manufactured or used in the performance of the Contract, including its use by the OWNER, unless otherwise specifically stipulated in the Contract Documents.

Licenses and/or royalty fees for the use of a process which is authorized by the OWNER of the Project must be reasonable and paid to the holder of the patent or his authorized licensee direct by the OWNER and not by or through the Contractor.

If the Contractor uses any design, device or materials covered by letters, patent or copyright, he shall provide for such use by suitable agreement with the OWNER of such patented or copyrighted design, device or material. It is mutually agreed and understood that, without exception, the Contract Prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the Work. The Contractor and/or his Sureties shall indemnify and save harmless the OWNER of the Project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device, materials or any trademark or copyright in connection with work agreed to be performed under this Contract, and shall indemnify the OWNER for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the Work or after completion of the Work.

8. SURVEYS, PERMITS AND REGULATIONS

Unless otherwise expressly provided for in this Contract, the OWNER will furnish to the Contractor all necessary horizontal and vertical control for the layout execution of the Work.

The Contractor shall perform all work necessary for the layout. The Contractor shall procure and pay for all permits, licenses and approvals necessary for the execution of his Contract.

The Contractor shall comply with all laws, ordinances, rules, orders and regulations relating to the performance of the Work, the protection of adjacent property and the maintenance of passageways, guard fences or other protective facilities.

9. CONTRACTOR'S OBLIGATIONS

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment, facilities and means (except as herein otherwise expressly specified) necessary or proper to perform and complete all the work required by this Contract within the time herein specified in accordance with the provisions of this Contract and said Specifications and in accordance with the Plans and Drawings covered by this Contract and any and all supplemental Plans and Drawings and in accordance with the directions of the Engineer as given from time-to-time during the progress of the Work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required. The Contractor shall observe, comply with and be subject to all terms, conditions, requirements and limitations of the Contract and Specifications and shall do, carry on and complete the entire work to the satisfaction of the Engineer and the OWNER.

10. WEATHER CONDITIONS

In the event of temporary suspension of work during inclement weather or whenever the Engineer shall direct, the Contractor will and will cause his Subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors to so protect his work, such materials shall be removed and replaced at the expense of the Contractor.

11. PROTECTION OF WORK AND PROPERTY-EMERGENCY

The Contractor shall at all times safely guard the OWNER's property from injury or loss in connection with this Contract. He shall at all times safely guard and protect his own work and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss or injury unless such be caused directly by errors contained in the Contract or by the OWNER or his duly authorized representative.

In case of an emergency which threatens loss or injury of property and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Engineer in a diligent manner. He shall notify the Engineer immediately thereafter. Any claim for compensation by the Contractor due to such extra Work shall be promptly submitted to the Engineer for approval.

Where the Contractor has not taken action but has notified the Engineer of an emergency threatening injury to persons or damage to the Work or any adjoining property, he shall act as instructed or authorized by the Engineer.

The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided in Paragraph 15 of these General Conditions.

12. INSPECTION BY PUBLIC AUTHORITIES

The Contractor shall permit authorized representatives and agents of any local, state or federal regulatory agency to inspect all work, materials and any relevant data or records.

13. REPORTS, RECORDS AND DATA

The Contractor shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the OWNER may request concerning work performed or to be performed under this Contract.

14. SUPERINTENDENCE BY CONTRACTOR

At the site of the Work, the Contractor shall employ a construction superintendent or foreman that is acceptable to the OWNER and Engineer. The superintendent or foreman shall have full authority to act for the Contractor.

15. CHANGES IN WORK

No changes in the Work covered by the approved Contract Documents shall be made without having prior written approval of the OWNER.

Charges or credits for the Work covered by the approved change shall be determined by one, more or a combination of the following methods: (1) Unit Bid prices previously approved; (2) an agreed Lump Sum; (3) the actual cost of labor (including foreman), materials entering permanently into the Work, the ownership or rental cost of construction plant equipment during the time of use on the extra Work, power and consumable supplies for the operation of power equipment, insurance, Social Security and old age and unemployment contributions.

To the cost under (3) above, there shall be added a fixed fee to be agreed upon. The fee shall be compensation to cover profit and the cost of additional supervision, overhead directly attributable to the change in Work, bond, and any other expenses increased as a result of the change.

16. EXTRAS

Without invalidating the Contract, the OWNER may order extra Work of the kind bid upon or make changes by altering, adding to, or deducting from the Work, the Contract sum being adjusted accordingly, and the consent of the Surety being first obtained where necessary or desirable. All the Work of the kind bid upon shall be paid for at the price stipulated in the Proposal. No claims for any extra Work or materials shall be allowed unless the Work is ordered in writing by the OWNER or its Engineer, acting officially for the OWNER, and the price is stated in the order.

17. 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. 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 ensure 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, 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 as hereinafter set forth, for each and every calendar day 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. 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 be charged with Liquidated Damages or any excess cost when the delay in completion of the Work is due: (1) to any preference, priority or allocation order duly issued by the Federal, State, County or Municipal government; (2) to unforeseeable cause beyond the control and without the fault of negligence of the Contractor, including but not restricted to acts of God, the public enemy, the OWNER, another Contractor in the performance of a Contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and severe weather; and (3) to any delays of Subcontractors or suppliers occasioned by any of the causes specified in (1) and (2) above. 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 causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

The liquidated damage provision applies to delay only. All claims for negligence, faulty workmanship, breach, performance, and damage resulting from the same are preserved.

18. CORRECTION OF WORK

All work, all materials (whether incorporated in the Work or not), all processes of manufacture and all methods of construction shall be at all times and places subject to the inspection of the Engineer who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture and methods of construction for the purposes for which they are used. Should they fail to meet his approval, they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall immediately be removed from the site. If, in the opinion of the

Engineer, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the Work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount, as in the judgment of the Engineer, shall be equitable.

19. SUBSURFACE CONDITIONS FOUND DIFFERENT

Should the Contractor encounter subsurface and/or latent conditions at the site materially differing from those shown on the Plans or indicated in the Specifications, he shall immediately give notice to the Engineer of such conditions before they are disturbed. The Engineer will thereupon promptly investigate the conditions and, if he finds that they materially differ from those shown on the Plans or indicated in the Specifications, he will at once make such changes in the Plans and/or the Specifications as he may find necessary and any increase or decrease of cost resulting from such changes to be adjusted in the manner provided in Paragraph 15 of these General Conditions.

20. CLAIMS FOR EXTRA COSTS

No claim for extra Work or cost shall be allowed unless the same was done in pursuance of a written order of the Engineer approved by the OWNER, as aforesaid, and the claim presented with the first estimate after the changed or extra Work is done. When work is performed under the terms of paragraph 15 of these General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost and, when requested by the OWNER, give the OWNER access to accounts relating thereto.

21. RIGHT OF THE OWNER TO TERMINATE CONTRACT

A. Termination for Cause

In the event that any of the provisions of this Contract are violated by the Contractor, or by any of his Subcontractors, the OWNER may serve written notice upon the Contractor and his Surety of its intention to terminate the Contract, such notices to contain the reasons for such intention to terminate the Contract and, unless within ten (10) days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangements or corrections be made, the Contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination the OWNER shall immediately serve notice thereof upon the Surety and the Contractor. The Surety shall then have the right to take-over and perform the Contract; provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the OWNER may takeover the Work and prosecute same to completion by Contract or by force account for the account and at the expense of the Contractor. The Contractor and his Surety shall be liable to the OWNER for any excess cost occasioned by the OWNER thereby. In such event, the OWNER may take possession of and utilize in completing the Work, such materials, appliances and plant as may be on the site of the Work and necessary therefor.

B. Termination for Convenience

Upon seven days 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 Contract. In such case, Contractor shall be paid (without duplication of any items):

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;
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 the uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

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.

22. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

Immediately after execution and delivery of the Contract, and before the first partial payment is made, the Contractor shall deliver to the OWNER an estimated construction progress schedule in form satisfactory to the OWNER, showing the proposed dates of commencement and completion of each of the various subdivisions of Work required under the Contract Documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule. The Contractor shall also furnish on forms to be supplied by the OWNER a detailed estimate giving a complete breakdown of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the Contract Price.

23. PAYMENTS TO CONTRACTOR

At least ten (10) days before each progress payment falls due (but not more often than once a month), the Contractor will submit to the Engineer a partial payment estimate filled out and certified to by the Contractor covering the Work performed during the period covered by the partial payment estimate and supported by such data as the Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER's title to the material and equipment and protect his interest therein, including applicable insurance. The Engineer will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the Contractor indicating in writing his reasons for refusing to approve payment. In the latter case, the Contractor may make the necessary corrections and resubmit the partial payment estimate. The OWNER, will within thirty (30) days of presentation to him of an approved partial payment estimate, pay the Contractor a progress payment on the basis of the approved partial payment estimate. The OWNER shall retain five percent (5%) of the amount of each payment until final completion and acceptance of all work covered by the Contract Documents. After fifty percent (50%) of the Work has been completed, the OWNER may reduce retainage to 2.5% on the current and remaining estimates if he finds that satisfactory progress is being made. Upon completion and acceptance of a part of the Work on which the price is stated separately in the Contract Documents, payment may be made in full including retained percentages, less authorized deductions.

The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.

All Work covered by partial payments made shall thereupon become the sole property of the OWNER. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the 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 terms of the Contract Documents.

Upon completion and acceptance of the Work, the Engineer shall issue a certification attached to the final payment request that the Work has been accepted by him under the conditions of the Contract Documents. The entire balance found to be due the Contractor, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the Contractor within thirty (30) days of completion and acceptance of the Work.

24. RIGHT OF OWNER TO WITHHOLD CERTAIN AMOUNT 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, workmen, mechanics, material-men 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 to be paid, discharged or waived. If the Contractor fails to do so, 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. 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 or any third party.

In paying any unpaid bills of the Contractor, the OWNER shall be deemed the agent of the Contractor. Any payment so made by the OWNER shall be considered as a payment made under the Contract by the OWNER to the Contractor. The OWNER shall not be liable to the Contractor for any such payment made in good faith.

25. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

The acceptance by the Contractor of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the Contractor for all things done or furnished in connection with this Work and for every act and neglect of the OWNER and others relating to or arising out of this Work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from any obligation under this Contract or the Performance Bond and the Payment Bond.

26. PAYMENTS BY CONTRACTOR

The Contractor shall punctually pay his employees who shall be engaged on the Work covered by this Contract.

The Contractor agrees that he will pay, and will indemnify and save harmless from any claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics,

material suppliers, suppliers of machinery and parts thereof, equipment, power tools and supplies, incurred in the furtherance of the performance of this Contract. The Contractor shall furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If the Contractor fails to pay his lawful claims, the OWNER may either directly pay unpaid bills, of which the OWNER has written notice, or withhold from amounts otherwise due the Contractor a sum of money deemed reasonably sufficient to pay all such lawful claims until satisfactory evidence is furnished that such liabilities have been fully discharged, whereupon payments to the Contractor shall be resumed in accordance with the terms of this Contract. In no event shall the provisions of this sentence be construed to impose upon the OWNER any obligation to the Contractor or to his Surety, or to any one who might have an interest in the matter, to take any action under this paragraph, it's provisions being solely for the benefit of the OWNER. 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 this Contract by the OWNER to the Contractor. The OWNER shall not be liable to the Contractor on account of the improvidence of any such payment made in good faith.

27. INSURANCE

A. General:

The Contractor shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the Contractor's execution of the Work, whether such execution be by himself, by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable: (1) claims under Workmen's Compensation, disability benefits and other similar employee benefit act; (2) claims for damages because of bodily injury, occupational sickness or disease or death of his employees; (3) claims for damages because of bodily injury, sickness or disease or death of any person other than his employees; (4) claims for damages insured by usual personal injury liability coverage which are sustained by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor or by any other person; and (5) claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the Work. These certificates shall contain a provision that coverage afforded under the policies will not be canceled unless at least thirty (30) days prior written notice has been given to the OWNER.

B. Contractor's Liability Insurance:

The Contractor shall procure and maintain, at his own expense, during the Contract Time, liability insurance as hereinafter specified.

Contractor's General Public Liability and Property Damage Insurance, including vehicle coverage, issued to the Contractor and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the Contract Documents, whether such operations be by himself or by any Subcontractor under him, or anyone directly or indirectly employed by the Contractor or by a Subcontractor under him. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of

not less than \$2,000,000 for any such damages sustained by two or more persons in any one accident.

C. Commercial Automobile Liability Insurance:

The Contractor shall maintain Commercial Automobile Liability Insurance in the Amount of \$1,000,000 per accident to protect from any and all claims arising from the use of the following: (a) Contractor's own automobiles and trucks; (b) Hired automobiles and trucks; (c) Non-owned automobiles used in the business of the Contractor; and (d) Automobiles and trucks owned and/or operated by sub-contractors. The OWNER shall be named as additional insured. This coverage shall apply to use of automobiles and trucks on and off the Project Site.

D. Fire and Extended Coverage Insurance:

The Contractor shall acquire and maintain, if applicable, Fire and Extended Coverage Insurance upon the Project to the full insurable value thereof for the benefit of the OWNER, the Contractor and Subcontractors as their interest may appear. This provision shall in no way release the Contractor or Contractor's Surety from obligations under the Contract Documents to fully complete the Project.

E. Workmen's Compensation Insurance:

The Contractor shall procure and maintain, at his own expense, during the Contract Time in accordance with the provisions of the laws of the state in which the Work is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the Project and in case any Work is sublet, the Contractor shall require such Subcontractor similarly to provide Workmen's Compensation Insurance, including occupational disease provision for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this Contract at the site of the Project is not protected under the Workmen's Compensation statute, the Contractor shall provide, and shall cause each Subcontractor to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

F. Builder's Risk Insurance:

The Contractor shall secure, if applicable, "All Risk" type Builder's Risk Insurance for work to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the Contract Price totaled in the Bid. The policy shall cover not less than the losses due to fire, explosion, hail, lightening, vandalism, malicious mischief, wind, collapse, riot, aircraft and smoke during the Contract Time and until the Work is accepted by the OWNER. The policy shall name as the insured the Contractor, the Engineer and the OWNER.

G. OWNER's Protective Liability Insurance:

The Contractor shall purchase and maintain OWNER's Protective Liability Insurance with the OWNER as the name insured and the Engineer and their servants, agents and employees as additional insured parties in amounts not less than the following; Bodily Injury Liability in the amount of \$1,000,000 for each occurrence and \$2,000,000 aggregate; Property Damage Liability in the amount of \$1,000,000 for all damages arising out of injury or destruction of property in any one accident and subject to that limit per accident a total (or aggregate) limit of \$2,000,000 for all damages arising out of injury to or destruction of property during the policy

period.

28. CONTRACT SECURITY

The Contractor shall furnish a Performance Bond in an amount at least equal to one hundred percent (100%) of the Contract Price as security for the faithful performance of this Contract and also a Payment Bond in an amount equal to one hundred percent (100%) of the Contract Price or in a penal sum not less than that prescribed by State or local law as security for the payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract. The Performance Bond and the Payment Bond shall be separate instruments.

The Surety company must appear on the U. S. Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the State of Mississippi.

29. ADDITIONAL OR SUBSTITUTE BOND

If, at any time the OWNER, for justifiable cause, shall be or become dissatisfied with the Surety or Sureties for the Performance Bond and/or Payment Bond, the Contractor shall, within five (5) days after notice from the OWNER to do so, substitute an acceptable Bond or Bonds in such form and sum and signed by such other Surety or Sureties as may be satisfactory to the OWNER. The premiums on such Bond or Bonds shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new Surety or Sureties shall have furnished such an acceptable Bond or Bonds to the OWNER.

30. ASSIGNMENTS

The Contractor shall not assign the whole or any part of this Contract or any monies due to become due hereunder without written consent of the OWNER. In case the Contractor assigns all or any part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the Work called for in this Contract.

31. MUTUAL RESPONSIBILITY OF CONTRACTORS

If, through acts of neglect on the part of the Contractor, any other Contractor or any Subcontractor shall suffer loss or damage on Work, the Contractor agrees to settle with such other Contractor or Subcontractor by agreement or arbitration if other Contractor or Subcontractor will so settle. If any Contractor, material supplier, or Subcontractor shall assert any claim against the OWNER related to the Work arising out of or related to any act of negligence, breach of contract or any intentional act of the Contractor, including but not limited to failure to pay for work done, labor provided or materials supplied, the OWNER shall notify the Contractor, who shall indemnify and save harmless the OWNER against any such claim.

32. SEPARATE CONTRACTS

The Contractor shall coordinate his operations with those of other Contractors. Cooperation will be required in the arrangement for storage of material and in the detailed execution of the Work. The Contractor, including his Subcontractors, shall keep informed of the progress and the detail work of other Contractors and shall notify the Engineer immediately of

lack of progress or defective workmanship on the part of other Contractors. Failure of a Contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him of the status of the Work as being satisfactory for proper coordination with his own work.

33. SUBCONTRACTING

The Contractor may utilize the services of specialty Subcontractors on those parts of the Work which, under normal contracting practices are performed by specialty Subcontractors.

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

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

The Contractor shall cause appropriate provisions to be inserted in all Subcontract relative to the Work to bind Subcontractors to the Contractor by the terms of these General Conditions and other Contract Documents insofar as applicable to the work of Subcontract that the OWNER may exercise over the Contractor under any provision of the Contract Documents.

Nothing contained in this Contract shall create any contractual relation between any Subcontractor and the OWNER.

34. ENGINEER'S AUTHORITY

The Engineer shall give all orders and directions contemplated under this Contract and Specifications relative to the execution of the Work. The Engineer shall determine the amount, quality, acceptability and fitness of the several kinds of work and materials which are to be paid for under this Contract and shall decide all questions which may arise in relation to said Work and the Construction thereof. The Engineer's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said Contract or Specifications, the determination or decision of the Engineer shall be a condition precedent to the right of the Contractor to receive any money or payment for Work under this Contract affected in any manner or to any extent by such question.

The Engineer shall decide the meaning and intent of any portion of the Specifications and of any plan or drawing where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor under this Contract and other Contractors performing work for the OWNER shall be adjusted and determined by the Engineer.

35. ENGINEER'S ON-SITE REPRESENTATION

If the OWNER and Engineer agree, the Engineer will furnish one or more resident project representatives to assist the Engineer in observing the performance of the work. The representatives will not be authorized to revoke, alter, enlarge or relax the provisions of these Contract Documents, nor to delay the fulfillment of this Contract by failure to observe the work

with reasonable promptness. Representatives are placed on the Work to observe the manner in which it is being done and to call the attention of the Contractor to any nonconformity with the Drawings. The project representative will not be authorized to approve or accept portions of the Work, to issue instructions contrary to the Drawings, Specifications and other part and sections of these Contract Documents or to act as foreman for the Contractor. The project representative will have authority to reject defective material and to suspend any work that is being improperly done, subject to the final decision of the Engineer.

The presence of a project representative shall in no way lessen the responsibility of the Contractor for full compliance with the requirements of these Contract Documents.

When material which does not conform to the requirements of the Drawings and Specifications has been delivered upon the Project, or has been incorporated into the Work, or when work has been performed that is of inferior quality, such material or work shall be considered as defective and shall be removed and replaced or made satisfactory as directed by the Engineer, at the expense of the Contractor, within ten (10) days.

Rejected and condemned material and work shall be removed within ten (10) days from the Project site. Upon failure of the Contractor to remove and properly dispose of the rejected material or work immediately after receiving formal notice to do so, the Engineer may have such material or work removed and the cost of such removal charged to the Contractor.

36. SUGGESTIONS TO CONTRACTOR

Any means, process or method of work suggested by the Engineer or any other representative of the OWNER to the Contractor, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor. The Engineer and the OWNER will assume no responsibility therefor.

37. USE OF PREMISES AND REMOVAL OF DEBRIS

The Contractor expressly undertakes at his own expense: (1) to take every precaution against injuries to persons or damage to property; (2) to store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the Work as will not unduly interfere with the progress of his work or the work of any other Contractors; (3) to place upon the Work or any part thereof only such loads as are consistent with the safety of that portion of the work; (4) to clean up frequently all refuse, rubbish, scrap material and debris caused by his operations, to the end that at all times the site of the Work shall present a neat, orderly and workmanlike appearance; (5) before final payment, to remove all surplus material, falsework, temporary structures, including foundations thereof, plant of any description, debris of every nature resulting from his operations and to put the site in a neat, orderly condition; (6) to effect all cutting, fitting or patching of his Work required to make the same to conform to the Plans and Specifications and, except with the consent of the Engineer, not to cut or otherwise alter the Work of any other Contractor.

38. QUANTITIES OF ESTIMATE

Wherever the estimated quantities of work to be done and material to be furnished on a Unit Price basis under this Contract are shown in any of the documents including the Proposal, they are given for use in comparing Bids and the right is expressly reserved, except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by the OWNER to complete the work contemplated by this Contract.

Such increase or diminution shall in no way vitiate this Contract nor shall any such increase or diminution give cause for claims or liability for damages.

Under no circumstances or conditions will the Contractor be paid anything on account of anticipated profits or allocations to overhead, or other related costs, upon the Work or any portion thereof covered by these Contract Documents, which are not actually performed; nor will the Contractor be paid a Unit Price different than the Unit Price bid for any item in the Proposal because the actual quantity is greater or less than the quantity shown in the said Proposal.

39. LAND AND RIGHTS-OF-WAY

The OWNER shall obtain all land, rights-of-way and easements necessary for the carrying out and completing the Work to be performed under this Contract that has not been obtained by the OWNER.

Necessary easements (construction or permanent) for the completion of the required Work, located on other than public properties, have been or will be obtained by the OWNER and are shown on the Drawings. The Contractor will be required to exercise extreme care so as not to damage the property outside of the prescribed easement. Should the Contractor determine that he will require land for his operations in addition to the temporary secured land shown on the Drawings, he will be required to obtain such additional land at his own expense.

Easements shall be restored to a condition equal to that prior to the construction except where mounding of the backfill over the trench is permitted.

Nothing herein contained and nothing marked on the Drawings shall be interpreted as giving the Contractor exclusive occupancy of the territory provided by the OWNER. The OWNER, its agents, employees and other Contractors of the OWNER may enter upon or occupy portions of the areas furnished by the OWNER. When the territory of one Contract is necessary or convenient means of access for the execution of another Contract, such privilege of access or other reasonable privileges shall be granted by the Contractor to the extent, amount, in the manner and at the times necessary. No such joint occupancy or use of the territory shall be made the basis of a claim for delay or damages to or against the OWNER.

40. GENERAL GUARANTY

Neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire occupancy of the premises by the OWNER shall constitute an acceptance of Work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defect in the Work and pay for all damage to other work resulting therefrom, which shall appear within a period of one (1) year from the date of final acceptance of the Work unless a longer period is specified. This provision does not waive any claim or obligation for latent defects.

The OWNER will give notice of observed defects with reasonable promptness.

41. CORRECTION OF DEFECTIVE WORK AFTER FINAL ACCEPTANCE

The Contractor hereby agrees to make, at his own expense, all repairs or replacements necessitated by defect in materials or workmanship, supplied under terms of this Contract, which become evident within one (1) year after the date of substantial completion. The

Contractor further assumes responsibility for a similar one (1) year guarantee for all Work and materials provided by Subcontractors or manufacturers of packaged equipment components. The effective date for the start of the guarantee or warranty period is defined as the date of substantial completion established by the Engineer in the certificate of Substantial Completion.

The Contractor also agrees to hold the OWNER harmless from liability of any kind arising from damage due to said defects. The Contractor shall make all repairs and replacements promptly upon receipt of written order for same from the OWNER. If the Contractor fails to make the repairs and replacements promptly, the OWNER may do the Work, and the Contractor and his Surety shall be liable for the cost thereof.

42. NOTICE AND SERVICE THEREOF

Any notice to any Contractor from the OWNER relative to any part of this Contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to said Contractor at his last given address, or delivered in person to said Contractor or his authorized representative on the Work.

43. REQUIRED PROVISIONS DEEMED INSERTED

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

44. SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

In order to protect the lives and health of his employees under the Contract, the Contractor shall comply with all pertinent provisions of the Contract Work Hours and Safety Standards Act, as amended, commonly known as the Construction Safety Act as pertains to health and safety standards; and shall maintain an accurate record of all cases of death, occupational disease and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract.

The Contractor alone shall be responsible for the safety, efficiency and adequacy of his plant, appliances and methods and for any damage which may result from their failure or their improper construction, maintenance or operation.

45. 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 thereof. 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.

46. SUSPENSION OF WORK

Should the OWNER be prevented or enjoined from proceeding with Work, or from authorizing its prosecution either before or after its prosecution, by reason of any litigation, 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.

SECTION 01025

MEASUREMENT AND PAYMENT

1.1 DESCRIPTION

- A. Contractor to furnish all labor, materials, tools, equipment, appurtenances and all services necessary to perform all work required, at the contract prices set forth in the Contract Agreement.
- B. No direct or separate payment will be made for providing miscellaneous temporary or accessory works, plant, services, Contractor's or Engineer's field offices, layout surveys, job signs, sanitary requirements, testing, safety devices, approval and record drawings, water supplies, power, removal of waste, watchmen, bonds, insurance, traffic management, erosion and sediment controls, pollution controls, and all other requirements of the Contract Documents. Compensation for all such services, things and materials to be included in the contract prices bid.

1.2 COMPENSATION

A. GENERAL:

- 1. The compensation as herein provided constitutes full payment for performance of the work. The compensation will further constitute full payment for all materials, labor, and equipment, and incidental items of construction furnished by the Contractor.
- 2. Material or work for which a Pay Item is not included in the Contract which is necessary to complete the work as contemplated under any section in the Specifications, furnished or performed, and is considered incidental to the completed construction no additional payment will be made.
- 3. There shall be no compensation for bypass pumping or dewatering.

B. ALLOWANCE ITEMS:

- 1. Payment for item(s) of work of this contract for which specific information is necessary to develop a bid price is not available prior to bidding; the allowance provides adequate budget and bonding to constitute full compensation for furnishing all labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, test and reports, and for performing work defined within the allowance.
- 2. Payment to the Contractor for work on Allowance Item(s) represents direct costs associated with the item.
- 3. No Contractor markup permitted on Allowance Item(s).

1.3 PAY ITEMS

1. Mobilization / Demobilization

- A. Payment Schedule: Payment will be made for mobilization and demobilization at the Contract Lump Sum Price according to the schedule located in Section 01110 Mobilization – Demobilization.

2. Clearing and Grubbing

- A. Measurement: Clearing and grubbing shall be considered as a unit of work (Lump Sum).
- B. Basis of Payment: Clearing and grubbing shall be paid for at the Contract Lump Sum price bid, which shall be full compensation for the removal and disposal of all trees and stumps, roots, vegetation, or any other waste material and debris within the limits of easements; and all other materials, equipment, tools, labor and incidentals necessary to complete the work.

3. Erosion Control & SWPPP

- A. Measurement: Erosion control measures and preparation of SWPPP shall be considered as a unit of work (Lump Sum)
- B. Basis of Payment: Payment shall constitute full compensation for the preparation and on-site holding of storm water pollution prevention plan; silt fence, erosion checks, bales, and all other materials and work necessary to provide erosion control along perimeter of the working area.

4. 12" Gravity Sewer (Open Cut)

- A. Measurement: Based per linear foot supplied and installed in accordance with the plans and specifications.
- B. Basis of Payment: This item will be paid at the Contract Unit Price bid per linear foot including pipe, pits, trenches, **select bedding and select backfill** and site restoration. The unit price includes all material, shoring, equipment and labor, disposal of any debris, waste, or excess material.

5. 15" Gravity Sewer (Open Cut)

- C. Measurement: Based per linear foot supplied and installed in accordance with the plans and specifications.
- D. Basis of Payment: This item will be paid at the Contract Unit Price bid per linear foot including pipe, pits, trenches, **select bedding and select backfill** and site restoration. The unit price includes all material, shoring, equipment and labor, disposal of any debris, waste, or excess material.

6. 21" Gravity Sewer (Open Cut)

- A. Measurement: Based per linear foot supplied and installed in accordance with the plans and specifications.
- B. Basis of Payment: This item will be paid at the Contract Unit Price bid per linear foot including

pipe, pits, trenches, **select bedding and select backfill** and site restoration. The unit price includes all material, shoring, equipment and labor, disposal of any debris, waste, or excess material.

7. 48" Diameter Manhole (10' – 15' Depth)

- A. Measurement: Measurement for manholes measuring 10 – 15 vertical feet is based as per each supplied and installed in accordance with plans and specifications.
- B. Basis of Payment: This item will be paid at the contract unit price bid per each manhole (10' – 15') supplied and installed, complete in place, with inlet and outlet connections, base section, channel, all riser sections, cone, frame and rim, manhole cover and all other materials and necessary items of work required.

8. 48" Diameter Manhole (15' – 20' Depth)

- A. Measurement: Measurement for manholes measuring 15 – 20 vertical feet is based as per each supplied and installed in accordance with plans and specifications.
- B. Basis of Payment: This item will be paid at the contract unit price bid per each manhole (15' – 20') supplied and installed, complete in place, with inlet and outlet connections, base section, channel, all riser section, cone, frame and rim, manhole cover and all other materials and necessary items of work required.

9. 48" Diameter Manhole (20' – 25' Depth)

- A. Measurement: Measurement for manholes measuring 20 – 25 vertical feet is based as per each supplied and installed in accordance with plans and specifications.
- B. Basis of Payment: This item will be paid at the contract unit price bid per each manhole (20' – 25') supplied and installed, complete in place, with inlet and outlet connections, base section, channel, all riser section, cone, frame and rim, manhole cover and all other materials and necessary items of work required.

10. Muck Excavation (FM)

- A. Measurement: Excavation to remove unstable soil as authorized by the Engineer shall be measured for payment by the cubic yard (FM).
- B. Basis of Payment: Muck excavation shall be paid for at the Contract Unit Price bid per cubic yard (FM). Payment shall constitute full compensation for excavation, haul, and disposal of muck.

11. #57 Crushed Stone (FM)

- A. Measurement: #57 crushed stone **to replace areas of muck excavation** as authorized by the Engineer shall be measured for payment by the cubic yard (FM).
- B. Basis of Payment: #57 Crushed Stone shall be paid for at the Contract Unit Price bid per cubic yard (FM) Payment shall constitute full compensation for mining, mixing, hauling, placing, and compaction.

12. 8" Gravity Connection to Manhole

- A. Measurement: Payment will be at the price bid per Each for connection of 8" gravity sewer to manhole.
- B. Basis of Payment: Payment shall constitute full compensation for the complete and accepted connection to the new or existing sewer manhole as depicted in the plans.

13. 12" Gravity Connection to Manhole

- A. Measurement: Payment will be at the price bid per Each for connection of 12" gravity sewer to manhole.
- B. Basis of Payment: Payment shall constitute full compensation for the complete and accepted connection to the new or existing sewer manhole as depicted in the plans.

14. 21" Gravity Connection to Manhole

- A. Measurement: Payment will be at the price bid per Each for connection of 21" gravity sewer to manhole.
- B. Basis of Payment: Payment shall constitute full compensation for the complete and accepted connection to existing sewer manhole as depicted in the plans.

15. Residential Service Line Reconnection

- A. Measurement: Measurement for Residential Service Line Reconnection is based per each supplied and installed as per the plans and specifications.
- B. Basis of Payment: This item will be paid for at the Contract Unit Price bid per each supplied and installed to reconnect existing residential service lines as identified in the plans; including excavation, backfill, service lateral pipe, and site restoration. The unit price includes all material shoring, equipment and labor, disposal of any debris, waste, or excess material.

16. Abandon Existing Manhole

- A. Measurement: The complete and accepted abandonment of existing manholes as depicted on the plans to be discontinued from service measured per each.
- B. Basis of Payment: Manhole abandonment will be paid at the contract unit price bid per each manhole plugged, backfilled, and cut to a minimum depth of 4-feet below final grade. The unit price includes all material, equipment and labor, disposal of debris, waste, or excess material.

17. Manhole Lining

- A. Measurement: The complete and accepted lining of designated manholes measured per each.
- B. Basis of Payment: Manhole lining will be paid at the contract unit price bid per each manhole fully cleaned and lined in accordance with specification section 09885 Manhole Lining System.

18. Seeding & Fertilizer

- A. Measurement: The completed and accepted seeding will be measured as a unit of work (Lump Sum).
- B. Basis of Payment: Seeding and top seeding shall be paid for at the Contract Lump Sum price bid, which shall be full compensation for furnishing, planting, fertilizing and maintaining the seeds on all disturbed area until final acceptance of the Contract; and for ground preparation, watering, all materials, equipment, tools, labor and incidentals necessary to complete the work.

19. Solid Sodding

- A. Measurement: Solid Sodding, supplied and established as specified, complete in place and accepted, will be measured per square yard.
- B. Basis of Payment: Solid Sodding, measured as prescribed above, will be paid for at the Contract Unit Price bid per square yard for solid sodding complete in place; which shall constitute full compensation for all trenching out, fine grading, ground preparation, seating the solid sod to the section specified; for backfill and disposal of surplus material; for furnishing, transporting and planting the sod; for all replanting deemed necessary; for furnishing water and watering; for all plant establishment; and for all other materials, equipment, tools, labor and incidentals necessary to complete the work.

20. Miscellaneous Concrete

- A. Measurement: The area of completed and accepted Cast-In-Place Concrete will be measuring and computed in cubic yards.
- B. Payment: This item will be paid for at the Contract Unit Price bid per cubic yard for Miscellaneous Cast-In-Place Concrete; price to be full compensation for disposal of surplus material; and for all material forms, equipment, tools, labor and incidentals necessary to complete the work.

21. Roadway Repair / Asphalt Paving

- A. Measurement: Roadway Repair / Asphalt Paving is based per square yard complete in place and accepted.
- B. Payment: This item will be paid for at the Contract Unit Price bid per square yard of roadway excavated and fully restored including, but not limited to, crushed stone base, asphalt paving, re-striping; and all other materials, equipment, labor, disposal of debris, waste or excess material, required to return the roadway to like conditions or greater.

END OF SECTION 01025

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SECTION 01611

STORAGE OF MATERIALS

PART 1 GENERAL

- A. Store and protect materials in accordance with manufacturer's recommendations and requirements of Specifications.
- B. Contractor to make all arrangements and provisions necessary for the storage of materials and equipment. All excavated materials, construction equipment, and materials and equipment to be incorporated into the Work placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work. Materials and equipment kept neatly and compactly stored in locations that will cause a minimum of inconvenience to other contractors, public travel, adjoining owners, tenants and occupants. Arrange storage in a manner to provide easy access for inspection.
- C. Areas available on the construction site for storage of material and equipment as shown or approved by the Engineer.
- D. Materials and equipment which are to become the property of the Owner stored to facilitate their inspection and insure preservation of the quality and fitness of the Work, including proper protection against damage by freezing and moisture. They are to be placed in inside storage areas unless otherwise acceptable to the Owner.
- E. Lawns, grass plots or other private property not used for storage purposes without written permission of the Owner or other person in possession or control of such premises.
- F. Contractor fully responsible for loss or damage to stored materials and equipment.
- G. Do not open manufacturer's containers until time of installation unless recommended by the manufacturer or otherwise specified.
- H. Do not store products in the structures being constructed unless approved in writing by the Engineer.

1.1 UNCOVERED STORAGE

- A. The following types of materials may be stored out-of-doors without cover:
 - 1. Piping. (Plastic piping shall not be stored in direct sunlight.)
 - 2. Precast concrete items.
 - 3. Grinder pump stations.
- B. Store the above materials on wood blocking so there is no contact with the ground.

1.2 COVERED STORAGE

- A. The following types of materials may be stored out-of-doors if covered with material impervious to water:
 - 1. Control panels.
- B. Tie down covers with rope and slope to prevent accumulation of water on covers.
- C. Store materials on wood blocking.

1.3 FULLY PROTECTED STORAGE

- A. Store all products not named above in buildings or trailers which have concrete or wooden floor, a roof, and fully closed walls on all sides.
- B. Provide heated storage space for materials which would be damaged by freezing.
- C. Protect mechanical and electrical equipment from being contaminated by dust, dirt and moisture.
- D. Maintain humidity at levels recommended by manufacturers for electrical and electronic equipment.

1.4 MAINTENANCE OF STORAGE

- A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:
 - 1. State of storage facilities is adequate to provide required conditions.
 - 2. Required environmental conditions are maintained on continuing basis.
 - 3. Products exposed to elements are not adversely affected.
- B. Mechanical and electrical equipment which requires long term storage have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package.
 - 1. Comply with manufacturer's instructions on scheduled basis.
 - 2. Space heaters which are part of electrical equipment connected and operated continuously until equipment is placed in service.

1.7 PROTECTION AFTER INSTALLATION

- A. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of Work.
- B. Control traffic to prevent damage to equipment, materials and surfaces.
- C. Provide coverings to protect equipment and materials from damage.
 - 1. Cover projections, wall corners, and jambs, sills and soffits of openings, in areas used for traffic and for passage of products in subsequent work.

2. Protect finished floors and stairs from dirt and damage:

- a. In areas subject to foot traffic, secure heavy paper, sheet goods, or other materials in place.
- b. For movement of heavy products, lay planking or similar materials in place.
- c. For storage of products, lay tight wood sheathing in place.
- d. Cover walls and floor of elevator cars, and surfaces of elevator car doors, used by construction personnel.

D. Waterproofed and Roofing Surfaces:

- 1. Prohibit use of surfaces for traffic of any kind, and for storage of any products.
- 2. When activity must take place in order to carry out the Contract, obtain recommendations of installer for protection of surface.
 - a. Install recommended protection, remove on completion of that activity.
 - b. Restrict use of adjacent unprotected areas.

E. Lawns and Landscaping:

- 1. Disturbance to lawns and landscaping from traffic restored to pre-existing conditions.

END OF SECTION 01611

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SECTION 02731

WASTEWATER GRAVITY MAINS AND APPURTENANCES

PART 1. GENERAL

1.1 SCOPE OF WORK:

- A. In accordance with the requirements of these Technical Provisions, the Contractor shall furnish and install all materials and perform all work necessary for or incidental to constructing a gravity flow sanitary sewer system complete and ready for use by the Owner.
- B. The work shall include the excavation, trenching and backfilling; furnishing and installing all trench sheeting and bracing; furnishing and installing all pipe, specials, services, manholes and related appurtenances; storage and protection of materials; testing, clean-up and all other operations necessary to complete the work in accordance with the detailed Specifications contained herein.

1.2 RELATED SECTIONS:

Section 02110 – Clearing and Grubbing
Section 02130 – Removal and Restoration of Improved Surfaces
Section 02320 – Excavation, Trenching, and Backfill

1.3 CONTRACTOR'S EQUIPMENT:

- A. The Contractor shall provide and maintain the principle equipment necessary to prosecute the work in an orderly and safe manner. The equipment shall consist of approved units designed or selected to perform and expedite all of the work and incidental items of construction.

1.4 CONFLICTS WITH OTHER UTILITIES:

- A. Where the location of the sewer is not clearly defined by dimensions on the Drawings or unless otherwise directed by the Engineer, the sewer shall not be laid closer horizontally than ten feet (10') to a water supply main and the top of the sewer pipe shall be, at a minimum, (18") below the bottom of the water pipe. Where gravity flow sewers cross above water lines, the sewer pipe (for a distance of ten feet [10'] each side of the crossing) shall either be ductile iron pressure pipe without any joint closer horizontally than three feet (3') to the crossing, or shall be fully encased in concrete.
- B. Where sewer construction conflicts with underground utilities which are indicated to remain in place, the Contractor shall be fully responsible for protecting these facilities and for restoring the portions of those lines which are damaged or severed as a result of his operations. Where existing lines in conflict are indicated to be removed by others, the Contractor shall cooperate with the owner of these utilities to the end that these conflicts may be removed prior to excavation for the sewers.

1.5 RELOCATION OF EXISTING UTILITIES:

- A. The Contractor shall notify the owner or owners of the existing utilities, whether above the ground or underground; prior to proceeding with trench excavation whenever such trenching operations are within ten feet (10') of any existing utility.
- B. In the event that during construction it is determined that any under-ground utility conduit, including sewers, water mains, gas mains and drainage structures, and any above ground utility facilities are required to be relocated, the Contractor shall notify the utility owner well in advance of his approach to such utility so that arrangements with the owner or owners of the affected utility can be completed without delay of the work.
- C. Should any utility be damaged in the trenching operations, the Contractor shall immediately notify the owner of the utility. The Contractor shall not attempt to make repairs. Duplicate copies of any written authorization given to the Contractor to make repairs shall be filed with the Engineer and shall be so worded as to save harmless the City and the Engineer of any responsibility whatsoever relative to the sufficiency of the repairs.
- D. The utility line re-location will be performed by the utility company owning said line unless specific pay items are included in this contract.

1.6 RAILROAD AND HIGHWAY CROSSINGS:

- A. All work incidental to the construction of sewer lines under railroads and highways shall be done with extreme care to safeguard life and property. After the necessary permits and agreements for these crossings have been approved and executed, the Contractor shall confer with the representatives of the railroad company, the State Highway Department or the county owning these properties and arrange schedules and the manner for constructing the work in accordance therewith. Any necessary submittals required by the permits shall be prepared by the Contractor and submitted through the Engineer.

1.7 MAINTENANCE:

- A. The Contractor shall be responsible for, without extra compensation, the maintenance of all sewers and structures to the lines and grades established for the construction, for the stability of all backfill and the finished grades above the sewers and around the structures and for the repair and replacement of all items which were damaged or removed during the construction.

PART 2. PRODUCTS

2.1 GENERAL:

- A. The Contractor shall furnish all materials necessary for or incidental to constructing a gravity flow wastewater system. All materials shall be new and of first quality with certified tests for all pipe and pipe fittings made at the manufacturer's plant to assure conformance with these Technical Provisions.

- B. The kinds and classes of materials incorporated into the work shall be designated by the Engineer. The Contractor shall not construe or interpret the several kinds of materials described herein as being EQUAL in their application for the PROJECT.
- C. All pipes shall be furnished by a pipe manufacturer having at least five years experience in manufacturing the specific type of pipe selected for use on this project. The pipe manufacturer shall also provide a list of no less than 24 referenced projects successfully completed and tested, complete with the contractor's, owner's and engineer's name and all appropriate phone numbers. These referenced shall include projects employing the specific pipe sizes equal to the sizes of pipe required on this project.

2.2 WATER FOR CONSTRUCTION AND TESTING:

- A. The Contractor shall be responsible for all water needed in constructing the work, flushing the completed system, testing and other incidental needs. All water used shall be from an approved source relatively free of pollution and shall be of a satisfactory bacteriological quality.
- B. Water used in mixing concrete and mortar shall be fresh, clean and free from injurious amounts of sewage, oil, acid, alkalis, salts or organic matter.

2.3 PIPE AND FITTINGS

A. Solid Wall PVC Pipe:

1. General

- a. Unplasticized Polyvinyl Chloride (PVC) pipe and fittings 4-inch to 18-inch shall conform to ASTM Standard Specifications D-3034, Type PSM Polyvinyl Chloride (PVC) Sewer Pipe for dimension ratio (DR) 26. PVC pipe and fittings 18-inch to 48-inch shall conform to ASTM Standard Specification F679. Joints for pipe and fittings shall be the Elastomeric Gasket type conforming to ASTM Specification D-3212.
- b. PVC pipe shall be designed to provide a minimum pipe stiffness value of 115 psi for all sizes when tested in accordance with ASTM Standard Specification D-2412 at a deflection of five percent (5%).
- c. The physical characteristics of PVC pipe shall conform to dimensions, tolerances and minimum pipe stiffness set forth in the following Table:
- d. Sewer pipe shall be available in two standard net laying lengths, 13.0' and 20.0', plus or minus one inch (1").

2. Joints:

- a. Joints bells shall be formed integrally with the pipe and fittings and shall have a rubber sealing gasket.
- b. The pipe spigot shall have a bevel and an insertion stopmark. The assembled joint shall be designed so the gasket shall be radially compressed to assure a positive water-tight seal for all installation conditions recommended by the manufacturer and

under all combinations of production tolerances for the joint components. Each size joint shall be qualified to have no leakage under various test conditions in conformance with ASTM Specification D3212, Joints and Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.

- c. Rubber Gaskets shall conform to ASTM F-477, Elastomeric Seals (Gaskets) for Jointing Plastic Pipe.
 - d. Joint lubricant shall be water soluble, non-toxic and have no deteriorating effects on gasket or pipe materials and shall not support the growth of bacteria. Lubricant shall be suitable for use at temperatures from 5 to 120 F (-15 to 50 C). Containers shall be labeled with the manufacturer's name and identified as PVC pipe joint lubricant. Each lubricant container shall have printed instructions for usage and joint assembly.
3. Quality Control Testing:
- a. Routine inspections, sampling and testing shall be performed during pipe and fitting production to assure a product which exceeds the minimum requirements referenced herein. The frequency of tests and test location shall be selected by the manufacturer unless otherwise specified in Section 8 of ASTM D 3034.
 - b. Certificates of conformance with these standard specifications for pipe, fittings and accessories shall be submitted by the manufacturer for approval by the Engineer prior to pipe installation.

B. PVC Closed Profile Pipe

1. General:
- a. The work in this section includes furnishing all labor, equipment, and materials required to supply, install, and test (PVC) closed profile wall pipe, including accessories, as shown on the drawings and/or specified herein.
 - b. All pipes shall be furnished by a manufacturer with a minimum of five years' experience producing closed profile PVC pipe.
 - c. Pipe manufacturer will be required to provide a list of 10 successfully completed projects minimum.
2. Quality Assurance:
- a. The contractor shall submit to the Engineer written evidence that the pipe furnished under this specification is in conformance with the material and mechanical requirements specified herein.
 - b. All pipes installed under this contract shall be inspected at the plant and certified by an independent agency, pre-approved and chosen by the design engineer for compliance with this section.
 - c. Each PVC closed profile wall pipe length and fitting shall be clearly marked with the following:

- 1) Manufacturer's Name
- 2) Nominal Pipe Size
- 3) Cell Classification
- 4) ASTM F 1803 Designation
- 5) Uni-Bell Plastic Pipe Association (UNI-B-9)
- 6) Pipe Stiffness – 75 PSI per ASTM D-2412

- d. All pipe shall be factory air tested with gasket in place and marked accordingly.
- 3. Handling and Storage:
 - a. The pipe shall be handled carefully with nylon slings. The pipe can be unloaded/transported with construction equipment rigged with an “extra long fork” attachment.
 - b. All pipe and accessories shall be stored on flat, level ground with no rocks or other objects under the pipe.
 - c. The maximum stacking height for PVC closed profile wall pipe shall be as directed by the manufacturer.
- 4. Materials
 - a. General
 - 1) Apart from structural voids and hollows associated with profile wall designs, the pipe and fittings shall be homogenous throughout and free from visible cracks, holes foreign inclusions and other injurious defects.
 - 2) The pipe shall be uniform as commercially practical in color, opacity, density and other physical properties.
 - 3) Unless otherwise shown on the drawings or directed by the Engineer or manufacturer, the maximum depth of cover, measured from the pipe crown to the ground surface, permitted for all 21” to 54” sizes will be 30 ft. with standard bedding. The allowable depths are based on the assumption that the ground water level or phreatic surface is at surface grade elevation.
 - b. PVC Large Diameter Heavy Wall Closed Profile Pipe
 - 1) PVC profile wall pipe and fittings shall be manufactured in accordance with the requirements of ASTM F 1803 latest edition.
 - 2) PVC profile wall pipe shall be made from a compound meeting the requirements of cell classification 12364A as defined by ASTM D 1784.
 - c. Joints
 - 1) PVC profile wall pipe joints shall be the bell and spigot type, and shall conform to ASTM D-3212.
 - 2) Gaskets shall meet the requirements of ASTM F 477 and be molded into a circular form, and shall be made of a properly cured high grade elastomeric compound.
 - 3) Gaskets shall be factory installed and chemically bonded to the bell end of the pipe. Field installed gaskets and field cut beveled lengths of pipe shall be done in accordance with the manufacturer’s instructions and recommended equipment and materials.
 - 4) All pipe gaskets and spigots will be thoroughly cleaned and lubricated before assembly.
 - 5) The use of putty, filler, rubber or plastic inserts to form either the inner or outer wall of the pipe will not be allowed on spigots or bells.
 - 6) Gaskets shall be of a four finned design and shall have a minimum sealing width of 3.25 inches.
- 5. The Engineer shall be entitled to inspect pipes and witness the manufacturing process.

2.04 PRECAST CONCRETE MANHOLES

A. General:

1. Precast concrete manholes shall consist of precast reinforced riser sections, an eccentric cone or flat slab top section, and a base section conforming with the typical manhole details as shown on the Plans.
2. Precast reinforced concrete manhole sections shall conform with all of the requirements of ASTM Designation C-478.
3. Joints for precast manhole risers shall be concrete pipe joints sealed with preformed plastic joint compound. Preformed plastic joint compound shall meet Federal Specification SS-S-00219 and AASHTO M-198.
4. Unless otherwise specified, manholes shall be precast with a crystalline waterproofing agent and the interior surface of all precast manholes lined with 24 mills, minimum, coal tar epoxy.

B. Pipe Connections to Manholes

1. General: When the Plans indicate new manholes, all connections shall be made with factory installed flexible connectors (boots) which are set in nearly cast or drill cut openings. When the PLANS indicate connections to existing manholes, these connections shall be made in a neat workmanlike manner, and shall be watertight brick and masonry construction, performed in an acceptable manner.
2. The size of the opening cast or cut in the existing manhole walls shall be restricted to a nominal diameter sufficient only to install the flexible manhole connector. The size of the opening cut in existing manhole walls shall be limited, but large enough to install brick and masonry as needed.
3. Flexible connectors shall be KOR-N-SEAL by NPC Systems, or Press Wedge II by Press-Seal Gasket Corp., and shall meet S=ASTM C-923. Brick and masonry shall be used to fill the annular space between the connecting pipe and the manhole, inside and outside the manhole, such that the pre-cut or cast hole is completely filled, and a protective masonry collar is formed around the pipe and connector.

C. Manholes Frames and Covers:

1. Frames and covers for manholes shall conform with ASTM Standard Specification A-48 for "Gray Iron Castings, Class 25". Manhole frames and covers installed within road right of way shall have a minimum H-20 load rating.

2.05 PLUGS OR STOPPERS:

- A. Plugs or stoppers shall consist of a quality manufactured disk of either concrete or ductile iron material fitting the bell end of the pipe.

2.06 TESTING COSTS AND CERTIFICATES:

- A. All control testing costs shall be borne by the pipe manufacturer. Prior to the time of shipment, the manufacturer shall submit two (2) copies of written certification and two (2) copies of the test reports to the Engineer that the pipe was manufactured and tested in accordance with the appropriate Specifications.

2.07 CONCRETE:

- A. All concrete shall conform with the requirements of Division 3 of these Specifications governing concrete work.
- B. AERIAL PIERS:
 - 1. Materials for construction of aerial support piers shall either be reinforced concrete, structural steel shapes or steel pipe as specified on the Drawings or listed in the Proposal.
- C. Structural steel shapes shall conform with the requirements of ASTM Standard Specification A-36. Steel pipe shall conform with the requirements of ASTM A-120. Reinforced concrete and steel reinforcement shall conform with Division 3 of these Specifications.

2.08 MATERIALS FOR SUPPLEMENTARY WORK:

- A. Materials for supplementary work consisting of repairs and replacement of street paving, sidewalks, driveways, curbs, grass plots and other related items shall conform with the respective Sections of these Specifications, or as specified on the Drawings.

2.09 BEDDING AND BACKFILL

- A. The pipe shall be installed in accordance with the requirements specified in Part 3, hereafter. Native material excavated from the trench may be used for backfill, where allowed by the Engineer from one foot above the top of pipe to the top of the trench. Such native material shall be non-organic, debris-free soil. Material required for select bedding and backfill is specified in paragraphs B hereafter.
- B. Select Bedding and Backfill: Select bedding and backfill material shall be considered as material hauled in from off site. Material used in meeting this specification shall not be measured or paid for separately but shall be considered an absorbed cost item relative to the cost of pipe installation. Testing costs incurred for tests required to verify that material meets this Specification shall be borne by the Contractor.
 - 1. Pipe Bedding: The pipe envelope shall be bedded with select material. Select granular material for pipe bedding shall be crushed limestone conforming with the gradation sizing Number 57 as follows:

GRADING REQUIREMENTS FOR
NUMBER 57 COARSE AGGREGATE

<u>SIEVE SIZE</u>	<u>PERCENT PASSING BY WEIGHT</u>
1 ½ Inch	100
1 Inch	95 – 100
¾ Inch	-----
½ Inch	25 – 60

$\frac{3}{8}$ Inch	-----
No. 4	0 – 10
No. 8	0 -5

2. Bedding for Undercut Areas: Areas of muck below the pipe envelope shall be excavated and replaced with select material only with the approval of the Engineer. Select granular material for pipe bedding shall be crushed limestone conforming with the gradation sizing Number 57.
3. Select Backfill: Select backfill shall be used only with the approval of the Engineer. Select material for backfilling pipe trenches shall be select sand- clay material meeting the following gradation limits.

<u>SIEVE SIZE</u>	<u>PERCENTAGE (BY WEIGHT) PASSING SQUARE MESH SIEVES</u>
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No. 10	30/100
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The material passing the No. 10 sieve shall meet the following:

No. 10	100
No. 40	20/85
No. 60	15/70
No. 200	8/40

The material passing the No. 40 sieve shall meet the following:

Liquid Limit (LL)	25 Max.
Plasticity Index (PI)	NP to 6 Max.

PART 3. EXECUTION

3.01 GENERAL:

- A. The requirements set forth herein shall govern the installation and construction of the gravity main wastewater system.
- B. The work required shall consist of excavation and trenching for open-cut construction; installation of pipe, manholes and appurtenances; per stations as shown on construction drawings; backfilling; testing; repair and restoration of property and final cleanup.

3.02 SITE PREPARATION:

- A. The Contractor shall prepare on a timely basis all rights-of-way, easements and sites indicated on the Drawings for construction of the wastewater improvements. The work shall include all clearing and grubbing, removal of structures and obstructions and the

removal of permanent surfaces and landscaping items designated to be restored upon completion of the installation.

- B. Clearing and grubbing shall generally conform with the requirements of Section 02110 and shall include the removal of structures and obstructions unless separate Pay Items are specifically provided for in the Proposal.
- C. The removal of permanent surfaces and the subsequent restoration of the surfaces shall be as set forth in Section 02130.
- D. Designated landscape items shall be preserved upon removal for replacement or replanting after construction.

3.03 EXCAVATION AND TRENCHING:

- A. All excavation of every description and of whatever substances encountered shall be performed in accordance with Section 02222.
- B. Where, because of caving or other causes, the trench widths exceed those allowed herein, the pipe may be laid in a concrete cradle or in bedding of suitable selected material, or the Contractor may use pipe of the next stronger classification. Where conditions requiring concrete cradle or extra bedding are due to improper construction methods by the Contractor, this work shall be at the Contractor's expense. In no case, without previous written consent from the Engineer, shall more than two hundred feet (200') of the lower trench be opened at the pipe bedding line in advance of the completed sewer line.

3.04 PIPE PLACEMENT

A. General:

1. Before any pipe is laid in the trench, the section in which pipe is to be placed must be dry and must be kept dry while joints are completed. Prior to being lowered into the trench, all pipes shall be thoroughly inspected so that when jointed in the trench, there shall be no shoulders or unevenness along the lower half of the pipe. The faces of all spigot ends and of all shoulders in the hubs or sockets shall be true. All abnormal enlargements on these faces shall be cut away before the pipe is lowered into the trench.
2. The pipe shall be laid upstream, without breaks and with the bell end or groove end upgrade. Whenever the work ceases for any reason, the unfinished end of the pipeline shall be securely closed with a tight-fitting plug or cover. Interior of pipe is be kept clean. It is essential that no mud, sand debris or other foreign matter be permitted to enter the pipeline at any time.
3. All pipe shall be placed and maintain in such a manner that at the time of acceptance of the Project the completed lines will be true to the established alignment and flow line grades.
4. Construction shall begin at the lowest point (elevation) and the pipe shall be laid continuously upstream without omitting sections or reaches.

B. Polyvinyl Chloride Pipe Joint Construction:

1. Bell holes shall be excavated in the bedding material to permit unobstructed assembly of the elastomeric joint. The bell hole shall be no larger than necessary to accomplish proper joint assembly. When the joint has been made, the void under the bell shall be filled with bedding or haunching material to provide uniform support to the pipe throughout its length.
2. All joints shall be assembled in accordance with recommendations of the manufacturer. The surfaces of all joint components shall be clean and dry. Use lubricant immediately before joining. Apply lubricant only on the spigot and not on the gasket or in the bell. Coat the entire circumference of the spigot bevel plus about one inch (25mm) behind the taper. Insert the lubricated spigot into the bell until contacting the gasket uniformly and while concentrically aligning the two.
3. Use normal force to insert the spigot until the insertion stripe mark is flush with the bell entrance. Rotating the pipe while inserting it is helpful. Use a bucking or pry bar with block or PVC pipe puller, if necessary to assist insertion. Proper joining and gasket position may be verified after joint assembly by rotation of the spigot by hand or using a strap wrench for $\frac{1}{4}$ or $\frac{1}{2}$ turn. If unusual joining resistance is encountered or if the insertion mark does not reach the flush position, disassemble the joint, inspect for damage, check the stripe length, reclean the joint components and repeat the assembly steps. Bells of fittings may permit less insertion depth than pipe bells by approximately one inch (25mm) because of less expansion and contraction allowance in the shorter laying lengths of fittings.
4. For shorter than standard pipe lengths, field cuts may be made with either hand or mechanical saws or plastic pipe cutters. Cuts shall be made without damaging the pipe. Ends shall be carefully cut so they are square and perpendicular to the pipe axis. Spigots shall have burrs removed and the ends smoothly beveled by a mechanical beveler or by hand with a rasp or file. Field spigots shall be stopmarked with felt tip marker or wax crayon for the proper length of assembly insertion. The angle and depth of field bevels and lengths to stop-marks shall be comparable to factory pipe spigots.

C. Alignment:

1. The Contractor shall utilize a commercial grade laser beam specifically manufactured to aid in maintaining grade and alignment of pipelines during installation. The primary unit shall be mounted on a heavy duty base and firmly anchored in the downstream manhole of the reach under construction. The maximum distance shall not exceed four hundred feet (400') per set-up.
2. Each joint of pipe will be installed using an approved target to align the pipe with the projected laser beam. The methods and procedures shall be in strict accordance with the manufacturer's recommendations. Care shall be exercised in order to prevent bumping or misalignment of the projected beam.

D. Bedding and Backfilling:

1. The Contractor will bed the sewer pipe and backfill in the pipe and sewer trench in the manner shown on the Drawings and in accordance with Section 02222 – Pipeline Excavation and Backfill.

2. Before any backfill is placed, the sewer line shall be checked by the Engineer for line, grade, and workmanship.

3.05 STANDARD MANHOLES:

- A. Manholes shall be constructed of precast concrete sections, unless otherwise specified.
- B. The construction shall also include the necessary frames, covers, flexible connectors castings, fittings, and connections; all installed or constructed in accordance with these Specifications and conforming with all requirements, details, lines, grades and dimensions shown on the Plans or established by the Engineer.

3.07 JOINTING DISSIMILAR PIPES:

- A. Where suitable adaptor couplings are not available for connecting dissimilar pipes, the jointing shall be accomplished with a special fabricated coupling, Fernco or equal and with concrete encasement as specified on the Plans.

3.08 SERVICES:

- A. Simultaneously with the installation of the sewer main, the Contractor shall install all required sewer services. The installation shall be coordinated in order to complete all surface restoration and repair work on a timely basis.
- B. Generally, the Contractor will be prohibited from prosecuting the work in such a manner that will require disturbing all restored or repaired work for installation of scheduled services.

3.10 SERVICE MARKER:

- A. The Contractor shall place a pressure treated creosote timber post in a vertical position at the end of each sewer stub-out opening. The post shall have a nominal diameter of four inches (4") and a length of six feet (6'). The post shall be placed so as to extend one foot (1') above the ground level.
- B. Service markers will not be required where stub-outs are connected to existing service lines prior to backfilling.

3.11 TEMPORARY SURFACES OVER TRENCHES:

- A. Whenever the wastewater improvements are constructed under roadways, driveways, sidewalks or other traveled surfaces, a temporary clay gravel surfacing shall be placed over the top of the trench in accordance with the requirements of Section 02130.

3.12 RESTORATION OF IMPROVED SURFACES:

- A. Restoration of all permanent type pavements, sidewalks, driveways, curbs, gutters, shrubbery, grass sod, fences, poles and other property or surface improvements removed or disturbed during or as a result of construction operations shall conform to the requirements set forth in Section 02130.

3.13 RESTORATION OF LANDSCAPED AREAS:

- A. All sod, shrubbery, decorative plantings and other landscape items shall be replanted, replaced or restored in the manner removed.
- B. Should new construction be required to replace damaged or unsalvageable items, the Contractor shall furnish all labor, materials, equipment, tools and incidentals set forth in the applicable Sections of the Specifications governing such items of work.

3.14 MAINTENANCE OF SITE:

- A. The Contractor shall take such measures necessary to prevent, control and correct any dust nuisance or muddy conditions developing on roadways as a result of his operation. Direct payment for maintenance of the site shall not be provided as such but shall be considered a subsidiary obligation of the Contractor.

3.15 FLUSHING:

- A. The completed gravity flow system shall be free of all mud, siltation and other foreign matter deposited or collected during construction. Flushing shall commence at the upstream end of the completed system and continue downstream manhole-to-manhole.
- B. Water used in flushing will not be permitted to enter into the existing system but shall be disposed of in a manner acceptable to the Engineer.
- C. Should the collected matter be sufficient in quantity to obstruct or affect the testing, flushing shall be accomplished prior to testing. Flushing will not be required in those sectors of the installed pipes and manholes where the exfiltration test has adequately cleaned the mains.

3.16 CLEAN-UP:

- A. After backfill is completed, the Contractor shall dispose of all surplus material, dirt and rubbish from the site. Surplus dirt shall be either removed from the site or deposited at the locations and in the manner directed by the Engineer.
- B. After all work has been completed, the Contractor shall removal all tools and other equipment used by him, leaving the site free, clear and in good condition.

3.17 TESTS:

A. GENERAL:

1. Before any backfill is placed, the sewer line shall be checked by the Engineer for line, grade and workmanship. Before acceptance, each section of line between manholes or such other length as determined by the Engineer to be suitable, shall be thoroughly inspected and any defects in workmanship shall be immediately corrected.
2. The Contractor shall conduct either an exfiltration or an infiltration test of each reach of sewer between manholes. The entire system shall be tested. An infiltration test will be required where the crown of the entire reach of sewer being tested lies three feet

(3') or more under the existing water table. An exfiltration test shall be required for all other conditions. Specials, tees, manholes, plugs, service lines, etc. shall be designed and constructed to meet the infiltration/exfiltration requirements as specified herein.

B. EXFILTRATION:

1. Exfiltration tests shall be conducted by blocking off all manhole openings except those connecting with the reach being tested, filling the line and measuring the water required to maintain a constant level in the manholes. During the exfiltration test, the average water depth above the pipe invert shall be ten feet (10'), unless manhole depths are such that this is impossible. The maximum depth at the lower end shall not exceed twenty-five feet (25') and the minimum depth at the upper end shall be at least five feet (5') above the crown of the pipe.

2. The total exfiltration shall not exceed two hundred (200) gallons per inch of nominal diameter per mile of pipe per day for each reach tested. For purposes of determining maximum allowable leakage, exfiltration tests shall be maintained on each reach for at least two (2) hours and as much longer as necessary (in the opinion of the Engineer) to locate all leaks.

3. The Contractor shall provide (at his own expense) all necessary piping between the reach to be tested and the source of water supply together with equipment and materials required for the tests. The methods used and the time of conducting exfiltration tests shall be acceptable to the Engineer.

4. If leakage in any reach exceeds the allowable maximum, the reach shall be retested after the leaks are repaired.

C. INFILTRATION:

1. The allowable infiltration rate shall not exceed two hundred (200) gallons per inch of nominal diameter per mile of sewer per day. For purposes of determining maximum allowable infiltration, manholes shall be considered sections of equivalent diameter pipe.

2. If the infiltration rate in any reach exceeds the allowable maximum, the reach shall be retested after the leaks are repaired.

3. The Contractor shall be required to repair all visible leaks although both the infiltration and exfiltration requirements have been met.

4. The Contractor shall provide (at his own expense) all necessary equipment, materials and personnel required for the tests. The methods used and the time of conducting infiltration tests shall be acceptable to the Engineer.

D. DEFLECTION TESTS:

1. After installation, the entire length of PVC pipe shall be checked for deflection by use of a "go-no-go" mandrel.

The mandrel shall be constructed on one-half inch (1/2") thick angle iron or Number 4 steel bars (ASTM A-15) welded to steel pipe to measure a five percent (5%) deflection. The mandrel design must be approved by the Engineer.

The average inside diameter of the pipe shall be used in calculating the five percent (5%) deflection.

The mandrel shall be pulled by hand through the pipe after backfill and trench settlement has occurred.

The system will be subject to a mandrel check at the eleven (11) month warranty inspection.

If any irregularities or obstructions are encountered, they shall be corrected by the Contractor at no expense to the Owner and the repaired section of the line again checked for excessive deflection

END OF SECTION 02731