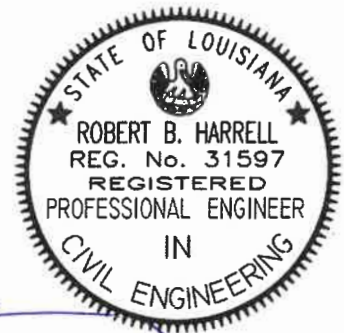


**SPECIFICATIONS AND
CONTRACT DOCUMENTS FOR
TOWN OF STERLINGTON
RELOCATION OF MARION STATE BANK SEWER LIFT STATION
PROJECT NO. 1146803**

DATE: SEPTEMBER, 2023




ROBERT B. HARRELL, P.E.

3/22/24

PREPARED BY

VOLKERT

**VOLKERT, INC.
MONROE, LOUISIANA
(318) 388-1422**

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ADVERTISEMENT FOR BIDS

**Town of Sterlington
C/O Volkert, Inc.
114 Venable Lane
Monroe, LA 71203**

Separate sealed BIDS for the **Relocation of Marion State Bank Sewer Lift Station**, will be received by the Owner, **Town of Sterlington, C/O Volkert, Inc.** located at **114 Venable Lane, Monroe, LA 71203**, until **10:00 am** (local time), on **February 3, 2026**, and then at said office publicly opened and read aloud.

The CONTRACT DOCUMENTS, consisting of Advertisement for Bids, Information for Bidders, BID, BID BOND, AGREEMENT, GENERAL CONDITIONS, Payment Bond, Performance Bond, DRAWINGS, SPECIFICATIONS, and ADDENDA, may be examined at the following location:

Volkert Inc.
114 Venable Lane
Monroe, Louisiana 71203

Copies of the CONTRACT DOCUMENTS must be obtained at the office of Volkert, Inc., located at 114 Venable Lane, Monroe, Louisiana, upon payment of **\$100.00** deposit for each paper set or request a link for an electronic set of plans and specs in PDF format. **Please mail all requests and deposits for plans to our mailing address, P. O. Box 8460, Monroe, Louisiana 71211.**

Deposits on the first set of documents furnished bona fide prime bidders shall be fully refunded upon return of the documents no later than 10 days after receipt of bids. On other sets of documents furnished to bidders, the deposit less the actual cost of reproduction, shall be refunded upon return of the documents no later than ten days after receipt of bids.

The Owner reserves the right to reject any and all bids received for just cause per State Public Bid Law.

January 2, 2026
Date

/s/
Honorable Matt Talbert, Mayor

Ad to Appear:

January 8, 2026
January 15, 2026
January 22, 2026
January 29, 2026

INFORMATION FOR BIDDERS

BIDS will be received by the **TOWN OF STERLINGTON**, (herein called the "OWNER"), until the time and at the location specified in the Advertisement for Bids, and then at said office publicly opened and read aloud.

Each BID must be submitted in a sealed envelope, addressed to the **TOWN OF STERLINGTON, C/O. VOLKERT, INC., 114 VENABLE LANE, MONRO, LA 71203**. Each sealed envelope containing a BID must be plainly marked on the outside as BID for **RELOCATION OF MARION STATE BANK SEWER LIFT STATION**, and the envelope should bear on the outside the BIDDER'S name, address, and license number if applicable, and the name of the project for which the Bid is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER, **TOWN OF STERLINGTON, C/O VOLKERT, INC., 114 VENABLE LANE, MONROE, LA 71203**.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one copy of the BID form is required.

The OWNER reserves the right to reject any and all BIDS received for just cause per State Public Bid Law. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within **45** days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve the CONTRACTOR from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID bond payable to the OWNER for five percent of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the payment BOND and performance BOND have been executed and approved, after which it will be returned. A certified check may be used in lieu of a BID BOND.

A performance BOND and a payment BOND each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance BOND, payment BOND, Attestations Affidavit, Felony Conviction/E-Verify Affidavit and the Non Collusion Declaration within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within ten (10) days of receipt of the acceptable performance BOND, payment BOND and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within 30 days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the 30 day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

After opening of the bids, THE OWNER may make such investigations as deemed necessary to determine if the bidder is a "responsible bidder" as defined in R.S. 2216 C(2)(a). A "Responsible bidder" shall mean a contractor or subcontractor who has an established business and who has demonstrated the capability to provide goods and services in accordance with the terms of the contract, plan, and specifications without excessive delays, extensions, cost overruns, or changes for which the contractor or subcontractor was held to be responsible, and who does not have a documented record of past projects resulting in arbitration or litigation in which such contractor or subcontractor was found to be at fault.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest responsible BIDDER.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the GENERAL CONDITIONS.

The Low BIDDER shall supply the names and addresses of major material SUPPLIERS AND SUBCONTRACTORS when required to do so by the OWNER.

Preparation of Bid: Each bid must be submitted on the prescribed form and accompanied by a Corporate Resolution authorizing a representative of the corporation to sign the bid, if the bidder is a corporation. All blank spaces for bid prices must be filled in, in ink or typewritten, in figures, and the foregoing certification must be fully completed and executed when submitted. Each bid must acknowledge of any addenda issued, must include a bid bond in the correct amount along with the appropriate power of attorney and include a corporate resolution. The checklist following the Information for Bidders will be used at the time of bid opening and any bid not having the forms listed will be rejected.

BIDDERS CHECK SHEET

BIDDERS ARE URGED TO USE THIS CHECK SHEET TO AVOID HAVING THEIR BID DISQUALIFIED. THE FOLLOWING ARE THE VARIOUS ITEMS WHICH MUST BE SUBMITTED IN ORDER TO HAVE A QUALIFIED BID.

- ☐ 1. Form of the Bid complete and signed on the prescribed form.
- ☐ 2. 5% Bid Bond in the unit amount of the bid.
- ☐ 3. Acknowledgment of receipt of Addendum issued, if any.
- ☐ 4. A Corporate Resolution or written evidence of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

PLEASE USE THIS CHECK LIST -- WE WANT AND NEED YOUR BID!

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: Town of Sterlington
C/O Volkert, Inc.
114 Venable Lane
Monroe, LA 71203
(Owner to provide name and address of owner)

BID FOR: Relocation of Marion State Bank
Sewer Lift Station
Volkert Project No. 1146803
(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by:

Volkert, Inc. and dated: September, 2023
(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA**: (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____.

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:
_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 *(Increase wet well diameter, top slab size and base slab size. All to be added)* for the lump sum of:
_____ Dollars (\$ _____)

Alternate No. 2 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:
_____ N/A _____ Dollars (\$ _____ N/A _____)

Alternate No. 3 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:
_____ N/A _____ Dollars (\$ _____ N/A _____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** **A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: Town of Sterlington
C/O Volkert, Inc.
114 Venable Lane
Monroe, LA 71203
(Owner to provide name and address of owner)

BID FOR: Relocation of Marion State Bank Sewer Lift Station
Volkert Project No. 1146803

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

BASE BID

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u> MOBILIZATION			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
1.	JOB	L.S.		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u> WELL POINTING, DE-WATERING & SHEET PILING FOR LIFT STATION WET WELL, GRAVITY SEWER LINES & MANHOLE (IF NEEDED)			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
2.	JOB	L.S.		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u> DUPLEX SEWER LIFT STATION – INCLS. ALL RELATED ELECTRICAL WORK			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
3.	JOB	L.S.		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u> PUMP STATION COVER (10' X 12')			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
4.	JOB	L.S.		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u> WOOD PRIVACY FENCE & DOUBLE HUNG WOOD GATE (6' HEIGHT)			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
5.	JOB	S.Y.		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u> GRAVEL DRIVE FOR LIFT STATION			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
6.	100	S.Y.		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# <u> </u> 6" CL 160 PVC SEWER FORCE MAIN			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
7.	30	L.F.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# 6" TIE-IN TO EXIST. 6" SEWER FORCE MAIN			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
8.	1	EA.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# 10" SDR35 PVC GRAVITY SEWER MAIN (14' – 16' DEEP)			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
9.	60	L.F.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# 10" SDR35 PVC PLUG			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
10.	1	EA.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# 10" GRAVITY MAIN TIE-IN TO EXIST. SEWER MANHOLE			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
11.	1	EA.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# 48" DIA. STANDARD CONCRETE SEWER MANHOLE W/ FRAME & LID W/ SEWER SENTRY DEVICE (14' – 16' DEEP)			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
12.	1	EA.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# TIMBER PILINGS FOR SEWER MANHOLE			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
13.	3	EA.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# DEMOLISH & REMOVE EXIST. LIFT STATION CONCRETE TOP			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
14.	JOB	L.S.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# REMOVE EXIST. ELECTRICAL RACK, METER BASE, PANEL, WIRING, CONDUIT, ETC. & DELIVER TO OWNER			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
15.	JOB	L.S.		

DESCRIPTION:	■ Base Bid or <input type="checkbox"/> Alt.# REMOVE EXIST. PUMPS, SUCTION PIPING, DISCHARGE GATE & CHECK VALVES, ETC. & DELIVER TO OWNER			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
16.	JOB	L.S.		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____ CONVERT EXIST. WET WELL INTO FLOW THROUGH MANHOLE W/ NEW CONCRETE TOP, FRAME & LID W/ SEWER SENTRY DEVICE (14' – 16' DEEP)			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
17.	JOB	L.S.		

ALTERNATE NO. 1 BID

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input checked="" type="checkbox"/> Alt.# _1_ INCREASE WET WELL DIAMETER FROM 72" Ø TO 84" Ø, ADD 1' X 13' OF REINFORCED CONCRETE TO TOP SLAB AND INCREASE BASE SLAB FROM 10' X 10' X 12" THICK TO 11' X 11' X 12" THICK			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
18.	JOB	L.S.		

Wording for "DESCRIPTION" is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.

BID BOND

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

_____ as Principal, and

_____ as Surety, are hereby held and firmly bound

unto the **TOWN OF STERLINGTON**, 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 _____, **2026**.

The Condition of the above obligation is such that whereas the Principal has submitted to the

TOWN OF STERLINGTON, a certain Bid attached hereto and hereby made a part hereof to enter

into a contract in writing, for the CONSTRUCTION OF:

RELOCATION OF MARION STATE BANK SEWER LIFT STATION

NOW THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall be in all other respects perform the agreement created by the acceptance of said Bid,

then this obligation shall be void, otherwise the same 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 hereunder set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____(L. S.)
Principal

By _____
Surety

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 AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the Corporation named as Principal in the within bond; that _____ who signed the said bond on behalf of the Principal was then _____ of said corporation; that I know his/her signature, and his/her signature thereto is genuine; and that said bond was duly signed, sealed, and attested to, for, and on behalf of said corporation by authority of this governing body.

(Corporate Seal)

Title: _____

CERTIFICATE AS TO SURETY

I, _____, certify that I am the _____ of the Surety who signed the bond. I certify that we are licensed to do business in the State of Louisiana and are currently recognized by the U.S. Department of the Treasury as acceptable sureties.

Power of Attorney for person signing for surety company must be attached to bond.

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, **2026**, by and between the **TOWN OF STERLINGTON**, hereinafter called "OWNER" and _____
_____ doing business as (an individual) or (a partnership) or (a corporation) 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:

RELOCATION OF MARION STATE BANK SEWER LIFT STATION

2. The CONTRACTOR will furnish all of the materials, 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 10 calendar days after the date of the NOTICE TO PROCEED and will complete the same within 120 consecutive 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 **\$200.00** for each consecutive calendar day thereafter as provided in Section 15 of the General Conditions.

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 (\$_____).

5. The term "CONTRACT DOCUMENTS" means and includes the following:

- (A) Advertisement for Bids
- (B) Information for Bidders
- (C) BID
- (D) BID Bond
- (E) Agreement
- (F) General Conditions
- (G) Payment Bond
- (H) Performance Bond
- (I) Drawings prepared by VOLKERT, INC., dated **SEPTEMBER, 2023**
- (J) SPECIFICATIONS prepared or issued by VOLKERT, INC., dated **SEPTEMBER, 2023**
- (K) ADDENDA:

NO. _____, dated _____, 2026.

NO. _____, dated _____, 2026.

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the Specifications such amounts as required by the CONTRACT DOCUMENTS.

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

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

OWNER:

TOWN OF STERLINGTON

BY _____

NAME _____

TITLE _____

(SEAL)

ATTEST:

NAME _____

TITLE _____

WITNESS AS TO OWNER

CONTRACTOR:

BY _____

NAME _____

ADDRESS _____

(SEAL)

ATTEST:

(PLEASE PRINT)

WITNESS AS TO CONTRACTOR

*CORPORATE RESOLUTION REQUIRED

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: that _____, a
_____, hereinafter called Principal and _____, hereinafter called
Surety, are held and firmly bound unto the **TOWN OF STERLINGTON**, hereinafter called OWNER in the
total aggregate penal sum of _____
_____ (\$ _____) in lawful money of the United States, for the payment of
which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, 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 _____, 2026, a copy of which is hereto attached
and made a part hereof for the construction of:

RELOCATION OF MARION STATE BANK SEWER LIFT STATION

in accordance with drawings and specifications prepared by VOLKERT, INC., dated **SEPTEMBER, 2023**.

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 the PRINCIPAL 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 WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way 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 it is expressly agreed that the BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, the Contract or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied. The OWNER is the only beneficiary hereunder.

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each of which shall be deemed an original, this the _____ day of _____, 2026.

ATTEST:

_____	_____
(Principal Secretary)	Principal

(SEAL)	BY _____

_____	_____
(Witness as to Principal)	(Address)

_____	_____
(Address)	Surety

ATTEST:	
_____	BY _____
(Witness as to Surety)	Attorney-in-Fact
_____	_____
(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.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: _____,

a _____, hereinafter called Principal and _____

_____, hereinafter called Surety, are held

and firmly bound unto the **TOWN OF STERLINGTON**, hereinafter called OWNER, and unto all persons,

firms, and corporations who or which may furnish labor, or who furnish materials to perform as described

under the contract and to their successors and assigns in the total aggregate sum of

(\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be

made, we bind ourselves, our heirs, executors, administrators, 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 _____, 2026, a copy of which is hereto

attached and made a part hereof for the construction of:

RELOCATION OF MARION STATE BANK SEWER LIFT STATION

in accordance with drawings and specifications prepared by VOLKERT, INC., dated **SEPTEMBER, 2023**.

NOW THEREFORE, if the PRINCIPAL shall promptly make payment to all persons, firms, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extensions or modifications thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs or machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and for all labor cost incurred in such WORK including that by a SUBCONTRACTOR, and to any mechanic or materialman lienholder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that beneficiaries or claimants hereunder shall be limited to the SUBCONTRACTORS, and persons, firms, and corporations having a direct contract with the PRINCIPAL or its SUBCONTRACTORS.

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 way 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 this contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no suit or action shall be commenced hereunder by any claimant: (a) Unless claimant, other than one having a direct contract with the PRINCIPAL shall have given written notice to any two of the following: the PRINCIPAL, the OWNER, or the SURETY above named within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the PRINCIPAL, OWNER, or SURETY, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer. (b) After the expiration of one (1) year following the date of which PRINCIPAL ceased work on said CONTRACT, is being understood, however, that if any limitation embodied in the BOND is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this BOND and whether referring to this BOND, the contract or the loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

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.

WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each of which shall be deemed an original, this the _____ day of _____, 2026.

ATTEST:

_____	_____
(Principal Secretary)	Principal
(SEAL)	
	BY _____

	(Address)

Witness as to Principal	

(Address)	

	Surety

ATTEST:

_____	BY _____
Witness as to Surety	Attorney-in-Fact
_____	_____
(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.

Name of Project

Project No.

STATE OF _____

PARISH OF _____

ATTESTATIONS AFFIDAVIT

Before me, the undersigned notary public, duly commissioned and qualified in and for the parish and state aforesaid, personally came and appeared Affiant, who after being duly sworn, attested as follows:

LA. R.S. 38:2227 PAST CRIMINAL CONVICTIONS OF BIDDERS

A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

(a) Public bribery (R.S. 14:118)

(c) Extortion (R.S. 14:66)

(b) Corrupt influencing (R.S. 14:120)

(d) Money laundering (R.S. 14:230)

B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

(a) Theft (R.S. 14:67)

(f) Bank fraud (R.S. 14:71.1)

(b) Identity Theft (R.S. 14:67.16)

(g) Forgery (R.S. 14:72)

(c) Theft of a business record
(R.S.14:67.20)

(h) Contractors; misapplication of
payments (R.S. 14:202)

(d) False accounting (R.S. 14:70)

(i) Malfeasance in office (R.S. 14:134)

(e) Issuing worthless checks
(R.S. 14:71)

LA. R.S. 38:2212.10 Verification of Employees

- A. At the time of bidding, Appearer is registered and participates in a status verification system to verify that all new hires in the state of Louisiana are legal citizens of the United States or are legal aliens.
- B. If awarded the contract, Appearer shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- C. If awarded the contract, Appearer shall require all subcontractors to submit to it a sworn affidavit verifying compliance with Paragraphs (A) and (B) of this Subsection.

Name of Project

Project No.

LA. R.S. 23:1726(B) Certification Regarding Unpaid Workers Compensation Insurance

- A. R.S. 23:1726 prohibits any entity against whom an assessment under Part X of Chapter 11 of Title 23 of the Louisiana Revised Statutes of 1950 (Alternative Collection Procedures & Assessments) is in effect, and whose right to appeal that assessment is exhausted, from submitting a bid or proposal for or obtaining any contract pursuant to Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950 and Chapters 16 and 17 of Title 39 of the Louisiana Revised Statutes of 1950.
- B. By signing this bid /proposal, Affiant certifies that no such assessment is in effect against the bidding / proposing entity.

NAME OF BIDDER

NAME OF AUTHORIZED SIGNATORY OF BIDDER

DATE

TITLE OF AUTHORIZED SIGNATORY OF BIDDER

**SIGNATURE OF AUTHORIZED
SIGNATORY OF BIDDER/AFFIANT**

Sworn to and subscribed before me by Affiant on the ____ day of _____, 20__.

Notary Public

FELONY CONVICTION/E-VERIFY AFFIDAVIT

By signing this document, the bidder hereby certifies, understands, and affirms that:

- 1.0 The bidder, partner, incorporator, director, manager, officer, organizer, or member who has a minimum of ten percent ownership **has not** been convicted of, or has not entered a plea of guilty, or nolo contendere to any of the state felony crimes or equivalent federal crimes (hereinafter referred to as "the crimes").
- 2.0 The conviction of the crimes listed below shall permanently bar any person or the bidding entity from bidding on public projects:
- 2.1 Public Bribery (R.S. 14:118), Corrupt Influencing (R.S. 14:120), Extortion (R.S. 14:66), and Money Laundering (R.S. 14:230).
- 3.0 The conviction of the crimes listed below shall bar any person or the bidding entity from bidding on public projects for a period of five years:
- 3.1 Theft (R.S. 14:67), Identity Theft (R.S. 14:67.16), Theft of a Business Record (R.S. 14:67.20), False Accounting (R.S. 14:70), Issuing Worthless Checks (R.S. 14:71), Bank Fraud (R.S. 14:71.1), Forgery (R.S. 14:72), Contractors; Misapplication of Payments (R.S. 14:202), Malfeasance in Office (R.S. 14:134).
- 4.0 If evidence is submitted substantiating that a false attestation has been made and the project must be re-advertised or the contract cancelled, the awarded entity making the false attestation shall be responsible to the public entity for the cost of rebidding, additional costs due to increased cost of bids and any and all delay costs due to the rebid or cancellation of the contract.
- 5.0 **By signing this document in accordance with La. R.S. 38:2212.10, the company on the above project, does hereby attest that:**
- 5.1 The private employer is registered and participates in a status verification system (E-Verify) to verify that all employees in the state of Louisiana are legal citizens of the United States or are legal aliens.
- 5.2 The private employer shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- 5.3 The private employer shall require all subcontractors to submit to the employer a sworn affidavit verifying compliance with Paragraphs (5.1) and (5.2) of this subsection.

And, executes this document as:

Company Name: _____

Address: _____

Phone Number: _____ FAX Number: _____

By: _____
Signature of Authorized Owner or Representative Title Date

Print Name: _____ E-Mail Address: _____

NON COLLUSION DECLARATION

A sworn statement shall be submitted in the form of an affidavit as indicated below, executed and sworn to by the bidder before persons authorized by laws of the State to administer oaths.

Affidavit

Project No. _____

Name of Project: _____

Parish: _____

(an individual)
(a partnership)
(a corporation)

certify that:

(1) That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for affiant, and

(2) That no part of the contract price received by affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for affiant.

(an individual)
(a partnership)
(a corporation)

Signed _____

By _____

Title _____

Parish or county _____

State of _____

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

My commission expires the _____ day of _____, 20_____.

Notary Public

GENERAL CONDITIONS

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Revised September, 2018

1. DEFINITIONS

- 1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated and shall be applicable to both the singular and plural thereof:
- 1.2 **ADDENDA** - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications, or corrections.
- 1.3 **BID** - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.
- 1.4 **BIDDER** - Any person, firm, or corporation submitting a BID for the WORK.
- 1.5 **BONDS** - Bid, Performance, and Payment Bonds and other instruments of surety, furnished by the CONTRACTOR and the CONTRACTOR'S surety in accordance with the CONTRACT DOCUMENTS.
- 1.6 **CHANGE ORDER** - A written order to the CONTRACTOR authorizing an addition, deletion, or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.
- 1.7 **CONTRACT DOCUMENTS** - The contract, including Advertisement for BIDS, Information for BIDDERS, BID, BID BOND, Agreement, Payment BOND, Performance BOND, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.
- 1.8 **CONTRACT PRICE** - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.
- 1.9 **CONTRACT TIME** - The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.
- 1.10 **CONTRACTOR** - The person, firm, or corporation with whom the OWNER has executed the Agreement.
- 1.11 **DRAWINGS** - The parts of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.
- 1.12 **ENGINEER** - The person, firm, or corporation named as such in the CONTRACT DOCUMENTS.
- 1.13 **FIELD ORDER** - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the OWNER to the CONTRACTOR during construction.

- 1.14 NOTICE OF AWARD** - The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.
- 1.15 NOTICE TO PROCEED** - Written communication issued by the OWNER to the CONTRACTOR authorizing him/her to proceed with the WORK and establishing the date for commencement of the WORK.
- 1.16 OWNER** - A public or quasi-public body or authority, corporation, association, partnership, or an individual for whom the WORK is to be performed.
- 1.17 PROJECT** - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.
- 1.18 RESIDENT PROJECT REPRESENTATIVE** - The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.
- 1.19 SHOP DRAWINGS** - All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.
- 1.20 SPECIFICATIONS** - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.
- 1.21 SUBCONTRACTOR** - An individual, firm, or corporation having a direct contract with CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.
- 1.22 SUBSTANTIAL COMPLETION** - That date 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 is intended.
- 1.23 SUPPLEMENTAL GENERAL CONDITIONS** - Modifications to General Conditions required by a Federal agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.
- 1.24 SUPPLIER** - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.25 **WORK** - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

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

2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

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

3. SCHEDULES, REPORTS AND RECORDS

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.

3.2 Prior to beginning Construction the CONTRACTOR shall submit construction progress schedules showing the order in which the CONTRACTOR proposes to carry on the WORK, including dates at which the various parts of the WORK will be started, estimated date of completion of each part and, as applicable:

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

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

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

4. DRAWINGS AND SPECIFICATIONS

- 4.1** The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.
- 4.2** In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over general DRAWINGS.
- 4.3** Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER and OWNER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

5. SHOP DRAWINGS

- 5.1** The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.
- 5.2** When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.
- 5.3** Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6. MATERIALS, SERVICES AND FACILITIES

- 6.1** It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.
- 6.2** Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.
- 6.3** Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.
- 6.4** Materials, supplies, and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the OWNER.
- 6.5** Materials, supplies, or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

7. INSPECTION AND TESTING

- 7.1** All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.
- 7.2** The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.
- 7.3** The CONTRACTOR shall provide at the CONTRACTOR'S expense the testing and inspection services required by the CONTRACT DOCUMENTS.
- 7.4** If the CONTRACT DOCUMENTS, laws ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the OWNER the required certificates of inspection, testing or approval.

- 7.5 Inspections, tests, or approvals by the OWNER or others shall not relieve the CONTRACTOR from the obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.
- 7.6 The OWNER, ENGINEER and their representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payroll, records or personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection or testing thereof.
- 7.7 If any WORK is covered contrary to the written instructions of the OWNER it must, if requested by the OWNER, be uncovered for the OWNER'S observation and replaced at the CONTRACTOR'S expense.
- 7.8 If the OWNER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the OWNER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the OWNER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, if, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

8. SUBSTITUTIONS

- 8.1 Whenever a material, article, or piece of equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue numbers, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT

DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

9. PATENTS

- 9.1** The CONTRACTOR shall pay all applicable royalties and license fees, and shall defend all suits or claims for infringement or any patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or product of a particular manufacturer or manufacturers is specified, however, if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, the CONTRACTOR shall be responsible for such loss unless the CONTRACTOR promptly gives such information to the ENGINEER.

10. SURVEYS, PERMITS, REGULATIONS

- 10.1** The ENGINEER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pipe locations and other working points, lines, elevations and cut sheets.
- 10.2** The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, shall be charged with the resulting expense and shall be responsible for any mistake that may be caused by their unnecessary loss or disturbance.
- 10.3** Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the GENERAL CONDITIONS. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance therewith, the CONTRACTOR shall promptly notify the ENGINEER and OWNER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

11. PROTECTION OF WORK, PROPERTY, AND PERSONS

- 11.1** The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR will take all necessary precautions for the safety of, will provide the necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
- 11.2** The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction. The CONTRACTOR will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. The CONTRACTOR will notify owners of adjacent utilities when prosecution of the work may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone directly or indirectly employed by any of them or anyone of whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER, of the ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.
- 11.3** In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instructions or authorization from the ENGINEER or OWNER, shall act to prevent threatened damage, injury or loss. The CONTRACTOR will give the OWNER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

12. SUPERVISION BY CONTRACTOR

- 12.1** The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by

the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. CHANGES IN THE WORK

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

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

14. CHANGE IN CONTRACT PRICE

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

- A.** Unit prices previously approved.
- B.** An agreed lump sum.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

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

- 15.2** The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.
- 15.3** If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount of liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.
- 15.4** The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER and ENGINEER.
- 15.4.1** To any preference, priority or allocation order duly issued by the OWNER.
- 15.4.2** To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and
- 15.4.3** To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs **15.4.1** and **15.4.2** of this article.

16. CORRECTION OF WORK

- 16.1** The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER or OWNER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.
- 16.2** All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17. SUBSURFACE CONDITIONS

- 17.1** The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:
- 17.1.1** Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or
- 17.1.2** Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.
- 17.2** The OWNER shall promptly investigate the conditions, and if it is found that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless the required WRITTEN NOTICE has been given; provided that the OWNER may, if the OWNER determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. SUSPENSION OF WORK, TERMINATION, AND DELAY

- 18.1** The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days for such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.
- 18.2** If the CONTRACTOR is adjudged as bankrupt or insolvent, or makes a general assignment for the benefit of its creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of its property, or if CONTRACTOR files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or disregards the authority of the ENGINEER or OWNER, or otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and its surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method the OWNER may deem expedient. In such case the CONTRACTOR shall not be

entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

- 18.3** Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.
- 18.4** After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the CONTRACT. In such case the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.
- 18.5** If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER terminate the CONTRACT and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days written notice to the OWNER and the ENGINEER stop the WORK until paid all amounts then due, in which event and upon resumption of the WORK CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.
- 18.6** If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

19. PAYMENT TO CONTRACTOR

- 19.1** At least ten (10) days before each progress payment falls due (but not more than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the 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 be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER'S title to the material and equipment and protect the OWNER'S interest therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing approval of payment, and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing the 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 twenty five (25) days of presentation of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate less the retainage. The Owner may withhold up to 10 percent of the contract price on projects of less than \$500,000 and 5 percent of the contract price on projects of \$500,000 or more until the expiration of 45 days after the recordation of formal Notice of Substantial Completion, or notice of default by the Contractor or Subcontractor.

All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of material and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the contract.

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 herein above designated have been paid, discharged, or waived. If the Contractor fails so to do, then the Owner may, after having served written notice on the said Contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of this contract, but in no event shall the

provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor or his Surety. In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the Contractor, and any payment so made by the Owner shall be considered as a payment made under the contract by the Owner to the Contractor and the Owner shall not be liable to the contractor for any such payments made in good faith.

When the Contractor considers that the work, or a designated portion thereof is acceptable to the Owner, and is substantially complete, which is defined as "the construction is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the work or designated portion thereof for the use for which it was intended" the Contractor shall notify the Owner who shall arrange for a "Substantial Completion Inspection" to be attended by representatives of the Contractor, Engineer and the Owner.

Upon recommendation of the Engineer, the Owner shall issue a Notice of Substantial Completion which shall be executed by appropriate officials of the Contractor, Owner, and Engineer. The Certificate of Substantial Completion shall contain the date on which the project was or is to be accepted as Substantially Complete which shall be the date on which the one year warranty period shall begin.

A "Punch" list of "Exceptions" and the dollar value related thereto will be prepared by the Engineer and Owner, attached to the Certificate of Substantial Completion. A monetary value will be assigned to each item so that a "Special" retainage can be withheld in addition to the "Normal" retainage for exceptions to the Acceptance.

The Contractor shall record the Certificate in the Parish in which the work has been performed and shall furnish a clear lien certificate from the Clerk of Court of that Parish not less than forty-five (45) calendar days after the Certificate was recorded.

At the end of the forty-five (45) day lien period and upon presentation of a clear lien certificate, the Contractor shall be due any "Normal" retainages that have been held to this point.

Upon recommendation by the Engineer that the Contractor has satisfied, corrected or repaired all items on the "Punch List" the Contractor shall be due the "Special" retainage which has been retained against the "Punch List".

However, under no conditions shall the "Normal" retainage be due the Contractor until the expiration of the forty-five (45) day lien period and the submission of a clear lien certificate.

- 19.2** The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site. Stored materials may be processed for payment, but only with an attached certified invoice from the material supplier. Afterwards, the Contractor must provide proof that they have paid their material supplier within 60 days or the Contractor will be required to reimburse the Owner the full amount of the stored materials payment.
- 19.3** Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.
- 19.4** The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.
- 19.5** The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demand of SUBCONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, the CONTRACTOR'S Surety, or any third party.

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

20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

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

21. INSURANCE

- 21.1** The CONTRACTOR shall purchase and maintain such insurance as will protect it 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 the CONTRACTOR, 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:
- 21.1.1** Claims under workmen's compensation, disability benefit and other similar employee benefit acts;
- 21.1.2** Claims for damages because of bodily injury, occupational sickness or disease, or death of employees;
- 21.1.3** Claims for damages because of bodily injury, sickness or disease, or death of any person other than employees;
- 21.1.4** Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and
- 21.1.5** Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.
- 21.2** Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. The Certificates shall contain a provision that coverages afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.
- 21.3** The CONTRACTOR shall procure and maintain, at the CONTRACTOR'S own expense, during the CONTRACT TIME, Liability insurance as hereinafter specified:

- 21.3.1** CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting the CONTRACTOR 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 the CONTRACTOR or by any SUBCONTRACTOR employed by the CONTRACTOR or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR employed by the CONTRACTOR. Insurance limit must be with an issuer licensed to do business in the State of Louisiana and the OWNER will be named as "Additional Insured" on the policy. 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 \$1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$1,000,000 aggregate for any such damage sustained by two or more persons in any one accident.
- 21.3.2** 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.
- 21.4** The CONTRACTOR shall procure and maintain, at the CONTRACTOR'S 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 the CONTRACTOR'S 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 provisions 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 Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of its employees not otherwise protected.

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

22. CONTRACT SECURITY

- 22.1** The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance BOND and a Payment BOND in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal Bonds, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payment shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

23. ASSIGNMENTS

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

24. INDEMNIFICATION

- 24.1** The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the

CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

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

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, its agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. SEPARATE CONTRACTS

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

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

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

26. SUBCONTRACTING

- 26.1** The CONTRACTOR may utilize the services of specialty SUBCONTRACTS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.
- 26.2** The CONTRACTOR shall not award WORK to SUBCONTRACTOR(S), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.
- 26.3** The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of its SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as the CONTRACTOR is for the acts and omissions of persons directly employed by it.
- 26.4** The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.
- 26.5** Nothing contained in this CONTRACT shall create any contractual relationship between any SUBCONTRACTOR and the OWNER.

27. ENGINEER'S AUTHORITY

- 27.1** The ENGINEER shall act as the OWNER'S representative, furnishing construction supervision services as required to coordinate the Engineering design with Construction Contract Work. These duties shall not include Field Inspection services, which will be provided by the OWNER. The ENGINEER shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.
- 27.2** The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship, and execution of the WORK. Inspections may be at the factory or fabrication plant of the source of material supply.
- 27.3** The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.
- 27.4** The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. LAND AND RIGHTS-OF-WAY

- 28.1** Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.
- 28.2** The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.
- 28.3** The CONTRACTOR shall provide at its own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29. GUARANTEE

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

30. ARBITRATION BY MUTUAL AGREEMENT

- 30.1** All claims, disputes, and other matters in question arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by making an acceptance of final payment as provided by Section 20, may be decided by arbitration if the parties mutually agree. Any agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.
- 30.2** Notice of the request for the arbitration shall be filed in writing with the other party to the CONTRACT DOCUMENTS and a copy shall be filed with the ENGINEER and OWNER. Request for arbitration shall in no event be made on any claim, dispute, or other matter in question which would be barred by the applicable statute of limitations.

- 30.3 The CONTRACTOR will carry on the WORK and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

31. TAXES

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

32. ENVIRONMENTAL REQUIREMENTS (Added 09-16-92, PN 191.)

The CONTRACTOR, when constructing a project involving trenching and/or other related earth excavation, shall comply with the following environmental constraints.

32.1 WETLANDS

The CONTRACTOR, when disposing of excess, spoil, or other construction materials on public or private property, WILL NOT FILL IN or otherwise CONVERT WETLANDS.

32.2 FLOODPLAINS

The CONTRACTOR, when disposing of excess spoil or other construction materials on public or private property, WILL NOT FILL IN or otherwise CONVERT 100 YEAR FLOODPLAIN areas delineated on the latest FEMA Floodplain Maps.

32.3 HISTORIC PRESERVATION

Any excavation by the Contractor that uncovers an historical or archaeological artifact shall be immediately reported to the ENGINEER and a representative of the OWNER. Construction shall be temporarily halted pending the notification process and further directions issued by the OWNER after consultation with the State Historic Preservation Officer. (SHPO).

32.4 ENDANGERED SPECIES

The CONTRACTOR shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the CONTRACTOR, the CONTRACTOR will immediately report this evidence to the ENGINEER and a representative of the OWNER. Construction shall be temporarily halted pending the notification process and further directions issued by the OWNER after consultation with the U.S. Fish and Wildlife Service.

PART II - TECHNICAL PROVISIONS

SPECIAL PROVISIONS

**SPECIAL PROVISIONS
SUBSURFACE INVESTIGATION FOR SEWER LIFT STATION**

SP-1 GENERAL

A Geotechnical Exploration has been previously completed for the proposed lift station site that is a part of this project.

The following Exhibit "A" is a copy of the soil borings that were taken at the proposed lift station sites, at the locations as identified on the lift station site plans.

SP-2 USE OF DATA

During the course of excavation should the Contractor and/or Subcontractor uncover and identify substrates unlike those identified in the soil investigation work in the affected area shall cease and the Contractor shall notify the Engineer of the discrepancy.

Bidders should visit the site and acquaint themselves with existing conditions.

SP-3 QUALITY ASSURANCE

The soil engineer may be retained by the Owner to observe performance of work in connection with excavating, trenching, filling, backfilling, and grading, and to perform compaction tests. The General Contractor shall work closely with the Owner's personnel and provide assistance as required.

The Contractor shall readjust the Work performed that does not meet technical or design requirements, but shall make no deviation from the Contract Documents without specific and written approval from the Owner or Engineer.

EXHIBIT "A"

August 22, 2023

Mr. Jimmy Kent
Global Laboratories
105 Parkwest Drive
West Monroe, Louisiana 71291

RE: Geotechnical Exploration
Proposed New Lift Station Wet Well - U.S. Highway 165
Sterlington, Louisiana
File No. G23-08-131

Dear Mr. Kent:

Attached is the requested geotechnical exploration report for the above referenced project site. The report provides the results of the field and laboratory analysis of the soils samples taken on August 15, 2023. The data provided is not to be construed as a geotechnical engineering report. The boring location was selected by representatives of this office through measurements provided by the design professional. The boring was completed approximately twenty-five (25) feet east and thirty-seven (37) feet north of the existing lift station.

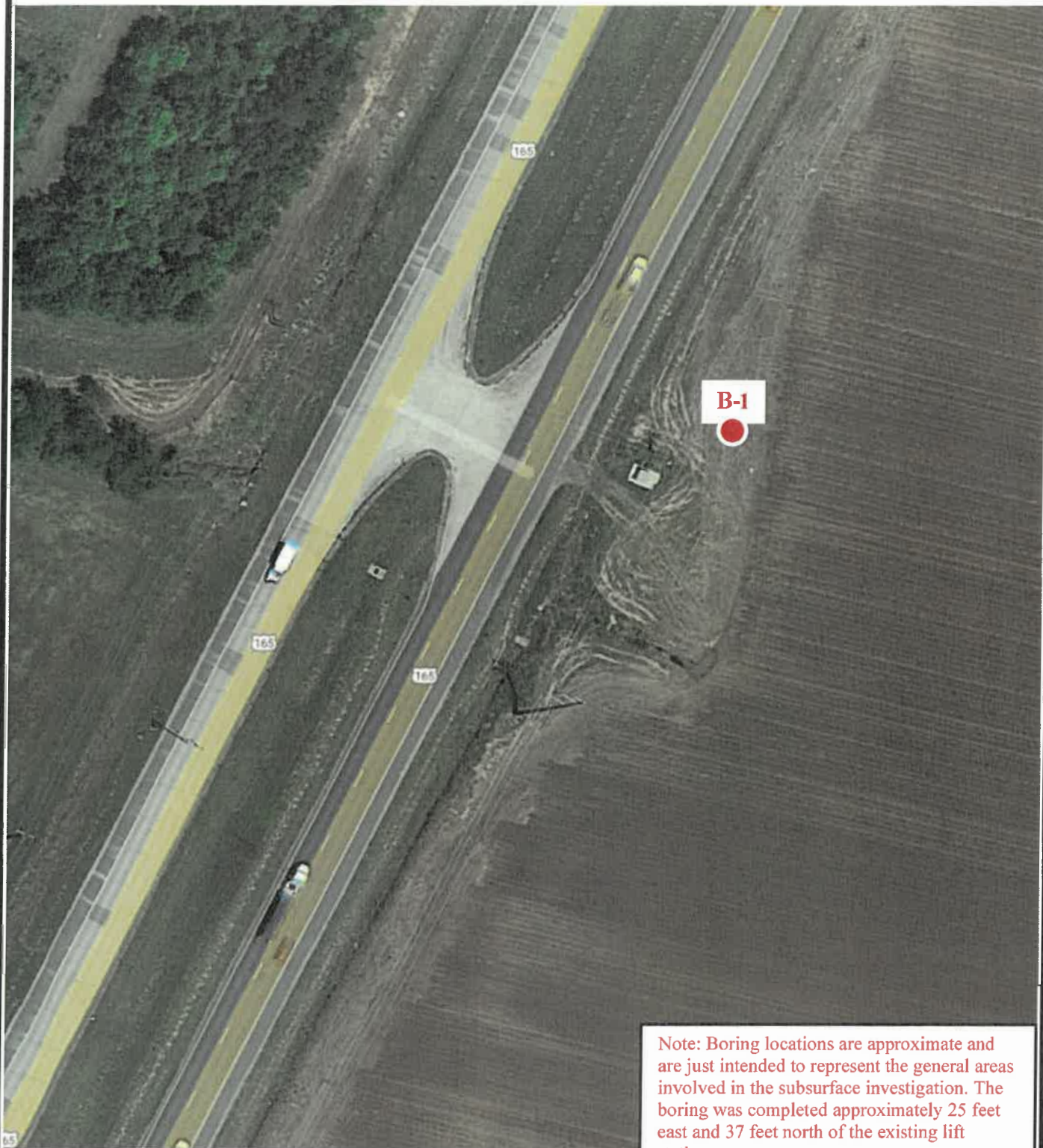
This office will be happy to assist you with engineering analysis of the site as you may require. It has been a pleasure to perform the subsurface and laboratory services for you. If we can be of any further assistance concerning this project, please do not hesitate to contact this office.

Sincerely,

Goldman Geotechnical Consulting, LLC



Taylor M. Goldman, PE
Member/Manager



Note: Boring locations are approximate and are just intended to represent the general areas involved in the subsurface investigation. The boring was completed approximately 25 feet east and 37 feet north of the existing lift station.



**BORING LOCATION DIAGRAM
PROPOSED NEW LIFT STATION WET WELL
U.S. HIGHWAY 165
STERLINGTON, LOUISIANA**

August 22, 2023

Project: G23-08-131

LOG OF BORING B-1

SHEET 1 of 1

Goldman Geotechnical Consulting, LLC
3841 Industrial Circle, Suite 100
Bossier City, Louisiana 71112
Telephone: (318) 459-6696

CLIENT: Global Laboratories
 PROJECT: New Lift Station Wet Well - U.S. Highway 165
 LOCATION: Sterlington, Louisiana
 NUMBER: G23-08-131

DATE(S) DRILLED: 8/15/23

FIELD DATA

LABORATORY DATA

DRILLING METHOD(S):

Continuous Flight Auger

GROUNDWATER INFORMATION:

Groundwater encountered at 13 ft during drilling operations.
 Water level recorded at 8 ft upon completion of field operations.
 Borehole walls collapsed at 20 ft.

SURFACE ELEVATION: Unknown

DESCRIPTION OF STRATUM

Loose dark brown silt (ML)

Medium stiff brown fat clay (CH)

-- Brown and gray below 8 ft

Loose tan sand with silt (SP-SM)

Soft dark gray fat clay (CH)

Boring Terminated 30 ft

REMARKS:

N - STANDARD PENETRATION TEST RESISTANCE
 P - POCKET PENETROMETER RESISTANCE
 T - TXDOT CONE PENETRATION RESISTANCE
 R - ROCK CORE RECOVERY
 RQD - ROCK QUALITY DESIGNATION

LOG A GNNL01 - LOG A GNNL01.GDT - 8/22/23 10:57 - C:\USERS\TGO\ONE\DRIVE\DESKTOP\GCGC REPORTS\GINTG23-08-131 NEW LIFT STATION WET WELL - STERLINGTON.GPJ

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SECTION I
CLEARING AND GRUBBING, EXCAVATION
BACKFILL AND COMPACTED FILL

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I-6	Measurement and Payment	I-4

SECTION I - CLEARING AND GRUBBING, EXCAVATION, BACKFILL AND COMPACTED FILL

I-1 CLEARING AND GRUBBING:

- (A) **General:** Clearing and grubbing shall consist of the removal and disposal of all vegetation, perishable and objectionable items from within the limits of construction as indicated on the plans, or as much thereof as the Engineer may direct. If no limits are shown on the plans, only the area actually under construction shall be cleared and grubbed, as specified herein.

Disposal of removed material shall comply with local laws and ordinances and no material shall be deposited on adjacent lands or buried on the site except by a method which is acceptable to all parties involved and is approved in writing by the Engineer.

Trees or other vegetation shall be felled and removed in such a manner as to avoid injury to any and all structures within the project limits and adjacent thereto and to any vegetation to remain. In case of injuries to bark, trunks, limbs or roots of vegetation to remain, the Contractor shall repair such damage without additional compensation, by corrective pruning, bark tracing, wood painting and other acceptable horticultural and tree surgery practices. The Contractor shall be liable for any and all damages to any structures. Trees unavoidably falling outside specified limits shall be cut up and removed.

- (B) **Clearing:** Clearing shall consist of cutting, removing, clearing of and disposal of logs, brush, stumps, vegetation, rubbish and other perishable or objectionable matter. In clearing, all trees, stumps, brush, etc., shall be cut flush with the ground if practicable, and in no case shall remain higher than 6 inches above the ground. Unless specified otherwise in the Special Conditions merchantable timber cleared under this project shall become the property of the Contractor.
- (C) **Grubbing:** Grubbing shall consist of the excavation and removal of all stumps, roots, logs, and other objectionable materials to a point 2 feet below subgrade elevation.

I-2 EXCAVATION:

- (A) **General:** The work provided for herein consists of furnishing all plant, labor, equipment and materials to perform all excavation as shown on the plans or as specified herein.

(B) Trench Excavation:

- (1) Water & Sewer Lines:** Trenches shall be constructed with vertical sides except where otherwise permitted by the Engineer and shall be constructed to allow a minimum of 30 inches of cover above the pipe. All trenches shall be of the size indicated on the plans and shall be graded to prevent sharp or sudden irregularities.

Trench location shall be such to prevent sudden changes in direction resulting in pipe deflections in excess of those recommended by the manufacturer of the pipe or such as would prevent the pipe from being laid as near the center of the trench as practical.

- (2)** All large rock, boulders, and stones shall be removed a minimum of 4 inches below and on each side of all proposed locations for water and sewer mains.

I-3 SHEETING AND BRACING:

Wherever necessary for protection of workmen, for security of adjacent utilities or structures, for stability of trench, or for proper installation and operation of pipes, etc.; the Engineer shall have the right to require that the excavation be braced and rendered secure to his satisfaction.

When, in the judgement of the Engineer, removal of sheeting or bracing is likely to cause damage to pavement or property, the Engineer may order such sheeting and bracing as he considers necessary left in place. Neither the giving of such orders by the Engineer, nor his failure or refusal to issue the orders, shall in any way relieve the Contractor of responsibility for damages to pavement or buildings.

The Contractor will be paid by separate pay item for all sheeting and bracing left in place at the written direction of the Engineer. The cost of all sheeting and bracing not required to be left in place shall be included in the price bid for lines of each size and depth, and the Contractor will receive no additional compensation therefor.

I-4 BACKFILL:

- (A) Backfilling of Water & Sewer Line Trenches:** No backfilling of water or sewer line trenches shall be accomplished until the Engineer has inspected the pipe to be covered; however, the Engineer reserves the right to require any trench to be backfilled at any time after installation of the pipe, if in his opinion, the open trench constitutes a public nuisance.

All final backfill material shall exclude debris, large stones, organic material, and other unstable material within 2 feet of the top of all sewer mains.

Select backfill shall be carefully placed around and under the haunches of the pipe in layers not exceeding six inches (6") and carefully compacted to at least the density of the adjacent undisturbed soil except at road, street, etc., crossings where the backfill shall be compacted as structure backfill.

Otherwise, this procedure shall be continued until the compacted backfill is twelve inches (12") above the crown of the pipe. If the trench is four feet (4') or closer to any buildings, street surface, or other improvement subject to damage by settlement, this method shall be continued to the ground surface; otherwise, the remainder of the trench may be backfilled without compaction and the backfill mounded sufficiently to compensate for future settlement.

- (B) Structure Backfill:** No backfill shall be placed around any structure until the Engineer considers the structure sufficiently strong to withstand the loads therefrom.

Backfill shall be placed in such a manner as to prevent wedging action or eccentric loading under or against any structure or part thereof.

All material to be used for structure backfill shall be free of organic material, trash and other objectionable matter and shall be of a type and from a source as approved by the Engineer.

The material shall be placed in horizontal layers not more than six inches (6") in depth and spread uniformly on the prepared surface on which it is placed. Each layer shall be moistened or aerated as necessary to achieve optimum moisture content within plus or minus two percent ($\pm 2\%$) and shall be compacted by an approved hand (mechanical) compactor or approved machine compactor average ninety-five percent (95%) of AASHO-T99 maximum density with no compaction being less than ninety-two percent (92%) of that same AASHO-T99 maximum density. The Contractor will be required to control surface waters in the areas of fill placement to prevent any damage to either the fill or adjacent areas.

The Engineer will consider relaxing the above specification if such specification results in compacted backfill with densities materially exceeding those of the adjacent undisturbed earth, unless such densities are particularly desired.

I-5 COMPACTED FILL:

All material to be used for compacted fill shall be free of organic material, trash, or other objectionable matter and shall be of a type and from a source as approved by the Engineer. The material shall be placed in horizontal layers not more than six inches (6") in depth and spread uniformly on the prepared surface on which it is placed. Each layer shall be

moistened or aerated as necessary to achieve optimum moisture content within plus or minus two percent ($\pm 2\%$) and shall be compacted to average of ninety-five percent (95%) of AASHO-T99 maximum density with no compaction being less than ninety-two percent (92%) of that same AASHO-T99 maximum density. The Contractor will be required to control surface waters in the areas of fill placement to prevent any damage to either the fill or adjacent areas.

I-6 MEASUREMENT AND PAYMENT:

- (A) **Measurement:** No separate measurement will be made for any items of work covered in this section with the exception of sheeting and bracing ordered left in place as specified in Article I-3 which sheeting shall be measured by the square foot of sheet facing in place.
- (B) **Payment:** No separate payment will be made for any of the items of work covered in this section with the exception of sheeting and bracing ordered left in place and all cost incidental thereto shall be included in the other applicable items of work. Sheeting and bracing ordered left in place will be paid for in an equitable manner in accordance with the paragraph of the General Conditions entitled "Changes in Work."

END OF SECTION

SECTION II

CONCRETE

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SECTION II

CONCRETE

II-1 GENERAL:

The Contractor shall provide all plant, labor, material, and equipment necessary for mixing, transporting, placing, finishing and curing all concrete including cutting, bending, placing all steel reinforcement as specified herein and as shown on the plans.

The mixing, placing, finishing and curing of any concrete shall be under the direct supervision of a foreman experienced in such work and the Engineer shall have the right to order the Contractor to discontinue any operations he considers not in accordance with good recognized practice.

Except as otherwise specified herein, all materials, equipment, operations, mixing, proportioning, conveying, placing, curing, finishing, or other materials or operations incidental to concrete work shall be in accordance with the current edition of "Building Code Requirements for Reinforced Concrete", ACI 318.

II-2 MATERIALS:

- (A) Cement: Cement shall be Portland Cement of American Manufacture, conforming to specification for Portland Cement, Types 1 and 3, ASTM C150.
- (B) Fine Aggregates: Fine aggregates shall conform to the standard specifications for Concrete Aggregates, ASTM C33. The aggregate shall consist of hard, durable, uncoated particles free from any foreign materials.
- (C) Coarse Aggregates: Coarse aggregates shall conform to the standard specifications for Concrete Aggregates, ASTM C33. The maximum size aggregate shall be three-quarters of an inch (3/4-inch).
- (D) Water: The water used for mixing and curing concrete shall be fresh, clean, and free from injurious amounts of oil, acid, alkali, salt, organic matter or other deleterious substances.
- (E) Water Stops: Water stops shall be of polyvinyl chloride (PVC) and shall be 6 inches wide with 3/16-inch web similar and equal to "Durajoint" as manufactured by Electronvent, Inc.

- (F) Admixtures: The use of admixtures for the purpose of improving the workability, accelerating the "setting", lowering the water or cement requirement or for other reasons, except for air-entraining admixtures which are permitted, will be permitted only by written approval of the Engineer. Air-entraining admixtures shall conform to "Specification for Air-Entraining Admixtures for "Concrete" ASTM C260.
- (G) Steel Reinforcement: Round Steel Bar Reinforcement shall conform to the requirement of ASTM A615, "Deformed Billet - Steel Bars for Concrete". Wire fabric shall meet requirements of ASTM A185 for "Welded Steel Wire Fabric for Concrete Reinforcement".

II-3

CLASSES OF CONCRETE:

Classes of concrete shall be as designated on the plans and each class shall meet the minimum compressive strengths as defined in the Louisiana Standard Specifications for Roads and Bridges 2016 Edition as listed below:

<u>CLASS</u>	<u>28-DAY COMPRESSIVE STRENGTH</u>
Class A1	4,500 psi
Class A2	6,500 psi
Class B	4,000 psi
Class M	3,000 psi
Grout	See Article II-15
Other	See Plans

All classes of concrete shall meet the applicable portions of this section.

II-4

PROPORTIONING OF CONCRETE:

All concrete shall be proportioned by a testing laboratory in accordance with the methods given in "Method of Making and Curing Test Specimens in the Laboratory," ASTM C192 or other approved means.

Each class of concrete will be proportioned to result in the minimum compressive strength as given in Article II-3 and shall have the minimum amount of water necessary to produce a plastic, workable mix that will enter into the corners and angles of the forms and voids to be filled and around the reinforcement by utilizing placing methods which are as specified herein and as is considered good practice.

II-5**BATCHING AND MIXING CONCRETE:**

If the Contractor elects to batch and mix the concrete on the job site it shall be in a modern and dependable batch-type mixing plant which shall be approved by the Engineer. The plant shall be capable of combining the aggregate, cement, water and any admixtures into a uniform and homogenous mixture and of discharging this mixture without segregation. Concrete shall be mixed only in quantities required for immediate use and any concrete not placed within 45 minutes after being discharged from the mixer shall not be used. Excessive overmixing, requiring additions of water to preserve the required consistency will not be permitted.

II-6**READY-MIX CONCRETE:**

Ready-mixed concrete may be used; however, it shall conform to all requirements of these specifications.

Ready-mixed concrete shall conform to the Tentative Specifications for Ready-Mix Concrete, ASTM C94 or latest revision. Except as required in ASTM C94 the concrete shall comply fully with that mixed on the site as specified in Article II-5.

The Engineer shall have the right to inspect any and all operations and facilities of the producer of the Ready-Mixed concrete and to order the Contractor to discontinue receiving concrete from any producer or to reject any concrete that does not meet these specifications.

It is the Contractor's sole responsibility to insure himself that any Ready-Mixed concrete fully complies with these specifications.

II-7**CONVEYING:**

Concrete shall be conveyed from the mixer to the forms as rapidly as practicable by any approved methods which will prevent segregation, loss of ingredients or other damage to the concrete.

II-8**PLACING:**

All debris or other foreign matter shall be removed from the space to be occupied by the concrete prior to placing any of the concrete. All reinforcement, inserts, hangers, ties, anchor bolts or other embedded items shall be properly located prior to the beginning of concrete placement. All forms or other containing devices shall be properly wetted prior to concrete placing.

The concrete shall be placed in approximately horizontal layers and worked into the corners and angles and around all reinforcement and embedded items without permitting the materials to segregate. The concrete shall be consolidated with the aid of mechanical vibrating equipment supplemented by handspading and tapping.

Under no circumstances shall partially hardened concrete be deposited in the work.

The permissible depth of concrete placed in each lift will be as shown on the plans or as specified herein. The placement shall be carried on at such a rate that the formation of cold joints will not occur. Slabs will be placed in one lift unless otherwise indicated on the plans.

II-9

JOINTS:

Joints shall be placed as shown on the plans or as authorized by the Engineer.

Premolded joint filler shall meet the requirements of ASTM D-1751-65 "Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction" or latest revision thereof.

Horizontal construction joints shall be prepared to receive the next lift by brushing with a wire brush or spraying with a water jet to expose coarse aggregate and provide a roughened surface. The surface shall be thoroughly washed to remove all loose material, laitance, dirt, or other foreign material and shall be thoroughly wetted and kept wet until the next lift is poured.

II-10

PLACING CONCRETE IN INCLEMENT WEATHER:

No concrete shall be placed where the ambient temperature of the air is below thirty-five degrees (35E) F or below forty degrees (40E) and falling except by written approval of the Engineer. The Engineer shall have the right to require the Contractor to postpone any concreting where, in the opinion of the Engineer, threatening weather may adversely affect the quality of the concrete to be placed.

Concrete shall have a temperature not less than fifty degrees (50E) F for not less than seventy-two hours (72 hrs.) after placing or until it has thoroughly hardened. Methods used to heat or protect the concrete shall be subject to the approval of the Engineer.

The Contractor is responsible for the final product of all concreting operations and permission given by the Engineer to place concrete at any time does not relieve the Contractor of the responsibility of satisfactory results. Any concrete placed under such conditions and proving unsatisfactory shall be removed and replaced by concrete in accordance with these specifications without additional cost to the Owner.

II-11 CURING AND PROTECTION:

All concrete shall be protected from premature drying, harmful elements of the weather, or other adverse conditions for seven (7) days after placing. All concrete shall be cured by wetting, membrane curing, or other approved methods, for seven (7) days after placing.

II-12 FINISHING:

- (A) General: All exposed concrete surfaces shall immediately, upon removal of forms, be freed of form marks, voids or holes left by removal of tie rods, or other deficiencies, by reaming all affected concrete and replacing with cement mortar composed of one part cement and two parts sand with the minimum amount of water consistent with good placement. Any structurally defective concrete shall be repaired by cutting out the unsatisfactory material and replacing with new concrete secured with keys, dovetails, anchors, etc.

All concrete surfaces to be exposed to view shall be cleaned of drip marks, discolorations, or other noticeable deficiencies, washed down and broomed so that the entire structure is left with a neat clean and uniform finish and color.

- (B) Finishing Slabs, Etc.: The surface shall be brought to proper grade and cross-section by a screen guided by side forms. The surface shall then be finished with a wood float and then troweled smooth and finished with a fine hair push broom drawn over the surface transversely to produce a non-skid surface. Edges shall then be finished with an edging tool.

II-13 FURNISHING AND PLACING STEEL REINFORCEMENT:

- (A) General: The Contractor shall furnish, cut, bend and accurately place all steel reinforcement including round bars and fabric. All reinforcement shall be free from rust, scale, oil, grease or other deleterious coatings before the concrete is placed. Reinforcement shall conform to the provisions of Article II-2(G). Except as provided herein, all reinforcement fabrication and placing shall be in accordance with the current edition of "Building Code Requirements for Reinforced Concrete - ACI 318."

- (B) Cutting and Bending: Reinforcement may be either mill or field bent. All bars shall be bent cold, unless otherwise permitted by the Engineer. The minimum diameter of the bend as measured on the inside of the bar shall be as follows:

<u>BAR SIZE</u>	<u>MINIMUM DIAMETER OF BEND</u>
#3 - #8	6 bar Diameters
#9 - #11	8 bar Diameters
#14- #18	10 bar Diameters

- (C) Splices in Reinforcement: Splicing of bars will be permitted only as shown on the plans unless approved by the Engineer. The lapped ends of bars may be securely wired together or separated to permit embedment of the entire surface of the bar. Lap splices shall not be used for bars larger than #11 where approved mechanical splices or welding will be required. All lap splices shall be lapped not less than 24 times the minimal diameter of the bar, but in no case less than 12 inches. All fabric reinforcement shall be spliced by lapping not less than 12 inches and securing the lapped ends together by wiring.
- (D) Placing Reinforcement: All reinforcement shall be accurately placed as shown on the plans and shall be adequately secured to prevent displacement during concrete placement. Reinforcement shall be secured in place by approved metal, PVC, or concrete supports and spacers and ties.

Reinforcing steel shall be so placed as to have the following minimum clear concrete cover:

<u>TYPE MEMBER OR CONCRETE</u>	<u>COVER</u>
Cast against and permanently exposed to earth	3 inch
Exposed to earth and weather	2 inch
Not exposed to weather or in contact with ground.....	3/4-inch

II-14

FORMS AND FALSE WORK:

- (A) Material: Forms shall be of wood, steel, masonite or other approval material. Falsework shall be of any structural material which has the structural strength to support the loads and the workability to produce the desire results.
- (B) Forms: All form material shall be of good quality, free from loose knots, holes, dents or other irregularities.

All forms shall be true to line and grade, mortar tight and rigid to prevent objectionable deformation. The Contractor will be required to remove and replace any concrete that has bulged or sagged as a result of inadequate forms or other operations of the Contractor. All internal ties shall be so designed and spaced that, upon removal of the forms, the metal remaining in the concrete will be at least 2 inches back from the exposed surfaces. Holes left by the removal of the forms or ties shall be filled as specified in Article II-12.

Forms or form lumber to be re-used shall be maintained clean and in good condition so as not to warp, deteriorate or otherwise change properties which might result in an inferior finished product.

All form surfaces shall be wetted prior to the placement of concrete.

- (C) False Work: All false work shall be true to line and grade and shall be sufficiently rigid including any necessary bracing to carry the imposed loads without excessive or objectionable settlement or deformation.

II-15

GROUT:

- (A) Material: Grout shall consist of one part Portland cement as specified in Article II-2 (A) and two parts sand as specified in Article II-2 (B).
- (B) Mixing: Grout shall be mixed using the minimum amount of water meeting the requirements of Article II-2 (D) necessary to produce a mix of consistency which will readily flow through the grout tubes or holes and into all corners and angles of the voids to be grouted. To this mix will be added aluminum powder at the rate of one (1) ounce per sack of cement. The Contractor will add admixture which shall be similar and equal to "Intraplast-C" Grouting Aid as manufactured by the Sika Chemical Corporation.
- (C) Placing: Grout shall be placed through approved holes or tubes as shown on the plans and the Contractor shall provide the necessary pipes, tubes, standpipes, pumps, etc., to ensure the grout is placed with adequate head to make certain the grout is placed into all corners and angles of the voids to be grouted.

All such devices shall be removed after grouting and any voids grouted smooth and even with the finished surface.

II-16

MEASUREMENT AND PAYMENT:

No separate measurement or payment will be made for any of the items under this section and the price of all items relating to concrete shall be included under the other items of work.

END OF SECTION

**SECTION III
FORCE MAINS**

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SECTION III FORCE MAINS

III-1 **GENERAL:**

The work provided for herein consist of furnishing all plant, labor, material and equipment and performing all operations incidental to the completion of the force mains as shown on the plans and as specified herein. Force mains covered under this section shall begin at the termination of the Cast Iron pipe at the lift stations a shown on the plans and shall end at the receiving manhole, including the connection to the manhole or at the fence line of the treatment plant, whichever is applicable.

III-2 **MATERIALS:**

- (A) **Plastic Pipe and Fittings:** All plastic for pipe and fittings shall be polyvinyl chloride (PVC) and shall conform to ASTM specification D 1784. All line pipe shall be class 160 PVC pipe similar and equal to that manufactured by the Johns-Manville Corporation or by the Certaineed Products Corporation except pipe which is to be jacked and bored which shall be schedule CL 200 PVC. All pipe shall be furnished in twenty foot (20') lengths, except that the manufacturer may have the option to furnish no more than fifteen percent (15%) of random lengths no less than ten feet (10') with plain tapered ends to be joined by a separate double bell coupling. The pipe shall be gasketed joint. **PIPE COLOR SHALL BE GREEN. ALL MECHANICAL JOINTS SHALL BE RESTRAINED WITH FORD UNI-FLANGE SERIES 1300 PIPE RESTRAINT OR APPROVED EQUAL JOINT RESTRAINT DEVICE.**

The pipe markings shall include the following data:

Manufacturer's Name
Nominal Size
Class Pressure Rating
PVC 1120
NSF Logo
Identification Code

All fitting shall be furnished by the pipe manufacturer and shall be specifically designed to accommodate the pipe for which they are to be used.

The pipe shall be designed to meet the following physical and chemical test and the manufacturer shall furnish the Engineer a certification that the pipe has successfully passed the tests prior to shipment:

Quick-burst Test: Randomly selected samples tested in accordance with ASTM D 1599 shall withstand a pressure of 600 psi and 7400 psi hoop stress applied for 90 seconds.

Sustained Pressure Test: Randomly selected samples tested in accordance with ASTM 1598 shall withstand without failure for 1000 hours a pressure of 340 psi and 4200 psi hoop stress.

Flattening: A two inch long specimen shall be compressed at a uniform rate of loading between parallel plates so that 100% flatness occurs within one minute. There shall be no evidence of cracking, splitting or breaking.

Tensile Strength: Tensile strength shall be tested in accordance with ASTM D -638 and shall indicate a minimum tensile strength of 7100 psi.

Impact Tests: Impact test shall be conducted in accordance with ASTM D 2444, using TUP A and the following energy levels and shall show no evidence of failure:

PIPE SIZE IN.	ENERGY, FT.-LBS.
---------------	------------------

2	60
2-1/2	60
3	75
3-1/2	75
4	100
5	110
6	120
8	130

Acetone Immersion Tests: Random samples shall be tested in accordance with ASTM D-2152.B. Samples shall be completely immersed in anhydrous acetone for one hour (1 hr.) and shall show no evidence of cracking, splitting or breaking.

- (B) **Polyethylene Pipe and Fittings:** All polyethylene pipe and fittings shall be made from PE 3408 which meets ASTM D-1248 and D-3350 specifications. All plastic components of the system shall conform to requirements in ASTM D 2683 specifications "Socket-Type Polyethylene Fittings for Outside Diameter - Controlled Polyethylene Pipe", ASTM D 3261 specifications "Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing". All plastic pipe wall thickness and fittings shall be

compatible for a Standard Dimension Ratio (SDR) 9 operating pressure system. All plastic pipe and fittings shall be manufactured by the same manufacturer. In addition, all valves must be compatible, i.e., the same temperature index as the pipe fittings to assure a compatible plastic material system.

Polyethylene extrusion compound from which the polyethylene pipe is extruded shall comply with applicable requirements for PE-3408 high molecular weight polyethylene plastic material. Material shall be as described in ASTM D-1248 latest revision and shall comply with the following:

Be of virgin quality approved for potable water service by the National Sanitation Foundation.

Pipe resin shall have a minimum inherent viscosity of 2.5 when run according to ASTM D-1601.

Exceed 5000 hours of ESC as determined by ASTM D-1693.

Have a specific gravity of between 0.950 and 0.955, as determined by ASTM D-1505.

Contain a minimum of 2% and a maximum of 3% of carbon black, for UV Stabilization, as determined by ASTM D-1603 and shall produce a finished product that is uniformly black.

The PE pipe or tubing shall be rated for use with water at 73.4 F at a hydrostatic design stress of 800 psi and a maximum working pressure of 200 psi. The Standard Dimension Ratio (SDR) shall be 9.

Minimum Burst Pressure: The minimum burst pressure at 73.4 F determined in accordance with ASTM D-1599, latest revision, shall be 800 psi. The time of testing of each specimen shall be between 60 and 70 seconds.

Sustained Pressure: PE 3408, with dimensions as stated above shall not fail, balloon, burst or weep as defined in ASTM D-1598, latest revision, when tested in accordance with the sustained pressure test method of ASTM D-2239 and ASTM D-2737 but under the test conditions hereinafter tabulated.

TEMPERATURE	SDR	TIME	PRESSURE RATING
75 ° F	9	50 years	200 psi
100 ° F	9	50 years	162 psi
150 ° F	9	50 years	86 psi

Environmental Stress Cracking: The PE pipe shall not show any loss of pressure in the six specimens tested for three hours in accordance with the requirements of ASTM D-2239 and ASTM D-2737 using the test pressure of 330 psi at 73.4 F.

Workmanship shall be of the highest level compatible with current commercial practice.

The PE pipe shall be homogenous throughout and free of visible cracks, holes, foreign inclusions or other injurious defects. It shall be uniform in color, opacity, density and other physical properties.

Marking on the pipe or tubing shall include the following at intervals of not more than five feet:

- (a) Nominal pipe size.
- (b) The type of plastic material, i.e., PE 3408.
- (c) The standard thermoplastic pipe dimension ratio or the pressure rating in psi for water at 73.4 F (200 psi).
- (d) The ASTM designation with which the pipe complies.
- (e) Manufacturer's name or trademark and code.

(C) **Casing Pipe:** Casing pipe shall be either schedule 40 PVC plastic pipe with solvent weld joints or butt welded steel pipe as shown on the plans. PVC casing pipe shall be provided in lengths which will not result in a joint in the casing as far as practicable and any necessary joints will be made as near the end as possible. In no case will the casing pipe be furnished in lengths less than forty feet (40').

(D) **Gate Valves:** Gate valves shall be iron body, bronze stem, rubber disc, resilient wedge seat type and shall be AWWA standard and shall be similar and equal to the AWWA non-rising stem gate valves as manufactured by the Mueller Company. The contractor shall furnish three (3) wrenches for each type of valve.

(E) **Swing Check Valves:** Shall be iron body, fully bronze mounted with rubber faced disc, flanged end and shall be either lever and spring or lever and weight operated as shown on the plans. If weight operated, the weight shall be adjustable to any position on the lever. Valves shall be Mueller or equal.

(F) **Pipe Locator Wire:** Pipe locator wire of 10 gauge solid copper or copper clad steel shall be securely attached to the crown of the pipe laid in the trench and shall be attached to the piping at the systems lift station, air relief valves and to an accessible rod at the force mains termination point.

No separate pay item shall be provided for locator wire and shall be included in the per linear foot price bid for force mains.

- (G) Air Release and Vacuum Valves:** Air release and vacuum valves shall be suitable for service to 160 psi and shall have a ductile iron, steel or cast iron body and shall have a float of either composition or stainless steel and be similar and equal to "Crispin" as manufactured by Multiplex Manufacturing Company, Berwick, Penn.

III-3 EXCAVATION, TRENCHING AND BACKFILL

All excavation, trenching and backfill required for the successful completion of this work as shown on the plans and as specified herein shall be in accordance with the applicable portions of Section I. However, excavation for all sewer force mains shall be with vertical sides and flat bottom and the maximum trench width shall be the nominal diameter of the pipe plus 2 feet maximum. All stones found in the trench for a depth of at least six inches below the bottom of the pipe shall be removed.

Select backfill (at the direction of the Project Engineer) will be placed around the pipe so as to prevent foreign objects from coming in contact with the pipe but no special compaction will be required unless specifically designated. The remainder of the trench shall be randomly backfilled with the excavated material and compacted.

The above backfilling procedure is not applicable adjacent to structures or across roadway - See Section I. Special laying, bedding and backfilling (Type I, II, Etc.) may be required as designated on the plans, elsewhere in the specifications or in the Bid Proposal; in such case those special requirements will supersede the above.

III-4 SURFACE OBSTRUCTIONS

All buildings, fences, bridges, railroads, trees, telephone lines, power lines or other property or improvements encountered shall be carefully protected from all injury by whatever means are necessary. In the event such damage occurs or such obstructions are removed during the progress of the work, they shall be required or replaced in a satisfactory manner within a reasonable time; except that the Contractor is fully responsible for any ramifications of any nature resulting from any such damage or removal.

III-5 SUBSURFACE OBSTRUCTIONS

The Contractor shall exercise extreme care during excavation, backfilling, pipe laying or other operations not to disturb or injure any other pipes, conduits, cables, structures, or other underground improvements without the written approval of the Engineer. The Contractor will be required to sling, brace or otherwise maintain any

of these facilities in operation at his own expense. He shall repair any damage done in a manner satisfactory to the Engineer within a reasonable time; except the Contractor is fully responsible for any ramification of any nature resulting from any such damage.

The Contractor shall give sufficient notice to the affected utility should it be necessary to remove or disturb any of their facilities. He shall also abide fully by their regulations governing such work. The Contractor shall immediately notify the proper authorities or utility company should any damage to such facility occur during the prosecution of this work.

The Owner reserves the right to make any necessary repairs to damaged or disturbed facilities at the Contractor's expense or to allow the utility to make repairs for which the Contractor shall pay the Owner or utility the proper charges for such repairs.

The Owner or Engineer will not be liable for any claim arising based on underground obstructions being different than indicated on the plans or in the contract documents.

The Contractor shall be responsible for locating and uncovering underground obstructions sufficiently far enough in advance so that the method of avoiding may be determined before the pipe laying reaches the obstruction.

The Contractor will be governed by instructions of the Engineer regarding pipe to be laid along state highways and the Engineer along with the applicable Highway Department will determine whether pipe shall be laid over, under or along the end of various drainage structures or facilities encountered.

III-6 ROAD, RAILROAD, CANAL, ETC. CROSSINGS

All crossings under paved roads shall be jacked and bored unless otherwise written approval is issued by the Engineer.

All lines under State Highways, with a nominal diameter of six inches (6") or greater shall either be encased as shown on the plans and as specified herein or shall be SDR11 PE, directional bored, unless otherwise written approval is issued by the Engineer. All lines smaller than six inches (6") in diameter shall be encased, only when shown on the plans.

All casing material shall meet the requirements of Article III-2 (C). All lines crossing railroads shall be encased. All lines which are jacked and bored without casing shall be CL200 PVC and shall not contain joints as far as is practicable. Should a joint be necessary it shall be made solvent weld of approved materials and shall occur as near the end of the crossing as possible and in no case shall the joint be located under the pavement or other inaccessible areas.

The Contractor shall not unreasonably block, obstruct or otherwise interfere with the normal operation of any canal, stream or other natural or artificial drainage facility and shall be fully responsible for any ramification resulting from any such damage or interference.

It should be noted that no additional compensation of any type will be paid in connection with any crossing except for extra work or materials. Pipe jacked and bored will be paid for at the unit price bid for either cased or uncased and will not be paid for again as sewer line.

III-7 PERMITS, CHARGES AND PAYMENTS

The Owner will secure the necessary permits for crossing highways, railroads, waterways, utilities, etc., as far as is practicable. The Owner will secure said permits prior to execution of the contract between Owner and Contractor; however, the Owner shall not be liable for any claims by the Contractor resulting from the Owner's failure to obtain any such permit. The Contractor shall maintain strict adherence with the terms under which such permits may be issued.

The Contractor shall be required to provide any necessary or required bonds or other approved acceptable security to guarantee the appropriate railroad company, highway department or other agency the complete restoration of their respective facilities upon completion of the work.

The Contractor shall maintain the bond or security until final acceptance of the work and shall receive no reimbursement for such; the price of which shall be included in other prices bid for applicable portions of the work.

III-8 LAYING AND JOINTING PIPES

- (A) **PVC Pipe:** The Contractor shall employ, for the laying and jointing of all pipe, only workmen who are skilled in laying and jointing such pipe.

All pipe and accessories shall be transported and handled in such a manner as to insure that they are delivered and installed in a sound and undamaged condition. Couplings and rubber gaskets shall be adequately stored to prevent damage and shall be kept clean of oil, grease or other deleterious substances and kept away from excessive heat.

Immediately before placing pipe in the trench, it shall be examined for any defects and cleaned and freed from any dirt or foreign material. Any defective pipe shall be promptly removed from the site.

All pipe shall be installed in accordance with the manufacturer's instructions. The pipe shall be installed in Class B bedding; however, bell holes will not be required if sufficient loose dirt is placed on the trench bottom to insure the barrel is bedded for as nearly its entire length as practical. The pipe shall not be laid on a hard trench bottom and backfilled. Pipe sizes up to and including four inches (4") diameter may be assembled in 200-foot or shorter lengths at ground level and rolled into the trench. Extreme care shall be taken to insure that none of the assembled joints come loose. Piping larger than four inches (4") shall be assembled in the trench; however, the end of the pipe to be jointed may be elevated to the ground surface and secured while jointing.

When work is suspended either for the night or for any other reasons, all open ends shall be securely and adequately plugged to prevent the entrance of foreign materials or trench water. While pipe laying is in progress the Contractor shall keep the trench free of water.

Any deflections from a straight line shall not exceed that recommended by the pipe manufacturer for the particular type of pipe and joints.

The Contractor shall place a minimum of two cubic feet (2 cu. ft.) of Class B concrete for thrust blocking at all fittings and bends effecting a change of 22½ degrees or more. The concrete shall be placed to be concentric around the result of thrust and shall bear against undisturbed earth.

- (B) **Polyethylene Pipe:** The Contractor shall employ, for the handling, joining and laying of PE pipe, only workmen who are skilled in working with PE pipe installed in sewer systems.

All PE pipe and accessories shall be transported and handled in such a manner as to ensure that they are delivered and installed in a sound and undamaged condition. Couplings and fittings shall be adequately stored to prevent damage and shall be kept clean of oil, grease or other deleterious substances and kept away from excessive heat.

Immediately before installation, the PE pipe shall be examined for any defects and cleaned and freed from any dirt or foreign material. Any defective pipe shall be promptly removed from the site.

When work is suspended either for the night or for any other reasons, all open ends shall be securely and adequately plugged to prevent the entrance of foreign materials or trench water. While pipe laying is in progress the Contractor shall keep the trench free of water.

Fusion Welding: Select workmen, who perform all fusion welding, shall be qualified by training and testing as a Fusion Welder for PE 3408 Plastic Pipe. This person or persons may show that he has had this training and has qualified by presenting to the Engineer a certified card or Certificate. This certification shall be dated within the past six (6) months.

III-9 INSTALLING VALVES AND FITTINGS

Valves, valve boxes and other fittings shall be installed when shown on the plans or as directed by the Engineer. Valves shall be set plumb and valve boxes shall be centered over the valves. Tops of valve boxes shall be set flush with the finished grade and the cover shall be level with the surface. Backfill shall be carefully compacted around all valve boxes.

III-10 TESTING OF FORCE MAINS

All force mains shall be subject to a hydrostatic test at a pressure of 100 psi for a period of not less than four hours.

Pipe shall be tested in individual sections as approved by the Engineer. All thrust blocking shall be in place and adequately covered prior to testing.

The pipe shall be slowly filled with water and all air shall be expelled. The hydrostatic pressure shall then be carefully brought up to the test level and maintained and the quantity of water required to maintain that pressure level (leakage) shall be measured by a displacement meter or other approved methods. In no case shall the leakage exceed 25 gallons per 24 hours per inch of diameter per mile. Should the leakage for any section exceed this the Contractor shall promptly locate the source of such leakage and repair such until the leakage does not exceed the quantity above.

It should be noted that no separate payment will be made for testing. All cost incidental thereto shall be included in the applicable prices bid for other items of work. It should also be noted that the Contractor shall be required to provide all water for testing at No Direct Pay.

III - 11 RELATION WITH WATER MAINS

In the event that water mains are located within the project area, the Contractor shall maintain a minimum of 6 feet horizontal clearance and a minimum of 18 inches vertical clearance between the sewer main and water main wherever water mains may be encountered.

MEASUREMENT AND PAYMENT

- (A) **Force Main: Measurement** - Force main will be measured by the lineal foot along the centerline of the pipe without deduction for valves or fittings, except that pipe jacked and bored will be excepted and measured separate. Pipe installed in casing will be included. Measurement will be from center to center of crosses, reducers, etc.

Payment - Force Mains will be paid for at the contract unit price bid per linear foot for pipe of the various sizes, types and classes, which price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and materials and hauling, trenching, bed preparation, laying, jointing, backfilling, testing, and other operation incidental to the satisfactory completion of the work as shown on the plans and specified herein.

- (B) **Force Main - Jacked and Bored: Measurement** - All pipe jacked and bored shall be measured by the linear foot installed along the centerline of the pipe from point of entry into the embankment at the springline of the pipe to point of exit from the embankment at the springline of the pipe.

Payment - Payment will be made at the contract unit price bid for "Force Main - Jacked and Bored" for the various sizes, which price and payment shall constitute full compensation for furnishing all plant, labor, equipment and materials and all hauling, jacking and boring, jointing, testing, and other operations incidental to the satisfactory completion of the work as shown on the plans and specified herein.

- (C) **Force Main – Directional Bored: Measurement** - PE force main lines will be measured by the lineal foot along the centerline of the pipe. Measurement will be from start to finish of the directional bore, as indicated on the plans. Locator wire shall be included as a pipe accessory.

Payment – PE force main lines will be paid for at the contract unit price bid per linear foot for each size, type and class, as indicated on the plans, which price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and materials including locator wire and hauling, trenching, bed preparation, laying, fusion welding, backfilling, testing and other operations incidental to the satisfactory completion of the work as shown on the plans and specified herein.

- (D) **Casing - Jacked and Bored: Measurement** - All casing pipe, installed and accepted shall be measured by the linear foot installed along the centerline of the casing from point of entry into the embankment at the springline of the casing to point of exit from the embankment at the springline of the casing.

Payment - The actual total lineal feet of casing, installed and accepted, measured as provided above, will be paid for at the contract unit prices bid for casing pipe of various diameters, which price and payment shall constitute full compensation for furnishing, hauling and installing complete, for all excavation, boring, jacking, and backfilling; and for furnishing all equipment, tools, labor and incidentals and the performance of all work necessary for the satisfactory completion of the work in accordance with the plans and as specified herein. The sewer force main carrier pipe which goes through the casing shall be paid for as "CL160 Sewer Force Main".

- (E) **Valves and Valve Boxes: Measurement** - Valve and valve boxes will be measured per each by actual count of each size installed, tested, sterilized and accented.

Payment - Valves and valve boxes installed and accepted will be paid for at the contract unit price bid for each size, which price and payment shall constitute full compensation for all plant, labor, equipment, and materials including all jointings devices necessary for the satisfactory completion of the work as indicated on the plans and specified herein.

- (F) **Replacement or Repair of Street and Sidewalk Surfacing: Measurement** - All surface areas authorized cut by the Engineer will be measured for payment by the square yard (SY) and will be equal to the actual length of trench cutting the pavement times the allowable trench width as shown on the plans plus two (2) feet.

Payment - Payment will be made at the contract unit price bid per square yard for the various types of surfacing, which price and payment shall constitute full compensation for furnishing all plant, labor, equipment and performing all work including furnishing all backfilling and base materials and surfacing materials and installing and compacting same and all other operation incidental to the satisfactory completion of the work as shown on the plans and specified herein. No additional compensation of any type will be paid for repairing damaged surfacing which was not authorized in writing by the Engineer and all repairs thereto will be promptly made by the Contractor to the satisfaction of the Engineer at no additional cost to the Owner.

- (G) **Special Bedding Material:** Under normal circumstances, sewer force main piping will not require overexcavation for the installation of a special "bedding material" beneath the sewer force main piping, as long as the Engineer or Resident Inspector verifies that the existing native material in the bottom of the excavated trench is sufficient to support the force main piping.

When excavation has reached the required trench depth, as long as the native material (regardless of PI) provides a suitable working table and has a reasonable density of 90% to 93%, the force main piping can be constructed without a specialized bedding material. However, if the existing soil does not provide a suitable working table, then a specialized bedding material will have to be imported and used. There is separate pay item established for this in the bid form.

For natural soil supported trenches, bellholes will be required.

A specialized imported sand bedding material will be required under sewer force main piping, only at those locations as directed by the Engineer or Resident Inspector (that do not meet the requirements for a natural soil supported trench). Imported material will only be required if the natural soil supported trenches are deemed to be inadequate by the Engineer or Resident Inspector.

When native material does not permit the use of a soil supported trench, use imported sand or pea gravel bedding material. Imported sand or pea gravel bedding material shall only be used in locations where unacceptable soil conditions exist and only when and where approved by the Engineer and/or the Resident Inspector. There is a separate pay item established for this in the bid form.

Sand, where directed to be installed by the Project Engineer, shall be a sound, durable bedding material free from organic or other deleterious material with 100 percent passing a No. 20 sieve.

Pea Gravel may be used as an alternate to Sand, at the Contractor's option. Pea Gravel shall conform to the following.

"Pea Gravel" and shall be in accordance with Grade F classification found in Table 1003-1 of the 2006 Edition of the Standard Specifications for Roads and Bridges, Louisiana Department of Transportation and Development.

<u>Screen Size</u>	<u>Percent Passing</u>
3/4"	100%
1/2"	90-100%
No. 4	15-60%
No. 8	0-15%
No. 16	0-5%
No. 200	0-1%

Measurement – All special bedding material used when directed by the Engineer will be measured by the Linear Foot (LF) of trench.

Payment – All special bedding material, measured as above, in place and accepted will be paid at the Contract Unit Price Bid for the various type of material, which price and payment shall constitute full compensation for furnishing, hauling, storing, installing and all other operations, including extra excavation required and all other labor requirements and incidentals necessary for the satisfactory completion of the work as shown on the plans and as specified herein.

END OF SECTION

**SECTION IV
SEWAGE PUMPING STATION
(SELF-PRIMING)**

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**SECTION IV
SEWAGE PUMPING STATION
(SELF-PRIMING)**

IV-1 GENERAL:

The Contractor shall provide all plant, labor, material and equipment and perform all work required to install and make operative the sewage pumping station as shown on the plans and specified herein.

The pumping station shall come with the pumps and motors factory mounted on a steel skid ready to mount on the floor of the pump house with controls pre-wired and tested. All electrical equipment shall be complete and ready to connect to the existing power supply.

IV-2 MATERIALS:

- (A) **General:** The sewage pumping system shall be complete with two (2) self-priming pumps and motors, sized as shown on the plans, and shall be tested and complete with controls as specified hereinafter. All self-priming pumps shall be similar and equal to those manufactured by the Gorman-Rupp Company, Mansfield, Ohio. The Contractor shall submit to the Engineer six (6) sets of shop drawings, for written approval, indicating all details of the pumps, motors, controls, etc.
- (B) **Operating Conditions:** Each of the pumps and motors shall be capable of pumping unscreened sewage at a rate and head conditions as shown in the table on the lift station plan sheet(s). Each pump shall be capable of passing solids of 3.0 inch diameter.
- (C) **Self-Priming Pump – Motor Construction:** The pump casing shall be designed so that sufficient liquid is retained in the case to reprime, even if the suction check valve is held open by solids causing liquid to drain back to SUMP when sump is idle. See section IV-4 for details of the check valve.

The pump impeller shall be of the two (2) blade semi-open non-clog type with pump out vanes on the back shroud. A removable volute lip late or full diameter back plate shall be used with the impeller so that rimmed impellers can be used without loss of priming efficiency. Impeller and lip plate shall be of ductile iron and shall be dynamically balanced.

The impeller shall screw onto the shaft and shall be secured with a suitable locking device.

The pump shall be fitted with a bearing bracket which contains the shaft and heavy duty ball bearings of adequate size to withstand imposed loads. The shaft shall be sealed with two (2) mechanical seals with an oil chamber between the seals.

The shaft seal shall be the double-floating, mechanical type with tungsten titanium carbide (or approved equal material) stationary and rotating faces. All metal parts of the seal shall be of stainless steel. Replacement of the seal, lip, plate, impeller and wear plate shall be accomplished through the removable inlet elbow opening. The shaft shall be covered with a stainless steel sleeve. The mechanical seal shall be housed in an oil lubricated seal housing with atmospheric drain.

- (D) **Pump Design Information:** The pump shall be similar and equal in all respects, including the pump performance curve, to a Gorman-Rupp, Super T-Series, Model T4CSC. The pump shall operate at the design conditions.
- (E) **Motors:** Pump motors shall be horizontal, open drip-proof, cast iron frame, with normal starting torque suitable for three phase (3Ø), 240-volt electric current. The motors shall be minimum 20 H.P. The motors shall be non-overloading throughout the entire range of the pump curve as shown on the Pump Manufacturer's Pump Curve Bulletin.
- (F) **Drive:** The pumps and motors shall be mounted on a fabricated steel skid and belt connected with belts adequately sized for the rated speed and horsepower. Minimum service factor on the V-belt drive system is 1.5. The belts shall be covered with an OSHA approved guard, which shall be painted as per the pump manufacturer's recommendation.
- (G) **Electrical Control Panel:** The control panel shall have a Nema 4X weather-tight enclosure and shall be dead front with separate hinged inside panel to protect electrical equipment. The panel shall have H-O-A switches for each pump and a running light for each pump. A locking hasp shall be provided on the outside door.

A circuit breaker and a NEMA rated magnetic contactor with separate electronic Nema rated 3-leg overload protection shall be provided for each pump. An alternating relay shall be provided to alternate pumps on each successive cycle of operation. Starters shall have auxiliary contacts to operate both pumps on override condition. An interlock relay shall be provided to automatically re-connect the control circuit in case of circuit breaker trip on one pump. H-O-A switches and run lights shall be provided for each pump.

All control panels shall include a transformer to reduce the control voltage to 115 volts.

All control panels shall be UL enclosed approved.

All control panels shall also include: single-phase secondary surge arrestor, elapsed time meters, through-the-door operators for all circuit breakers, electronic phase failure and voltage protection relays, re-settable high temp shutdown systems for each pump and all wiring numbered at terminations on both ends.

A terminal strip shall be provided for connecting pump and control wires. Additional terminals shall be provided to connect alarm, heat sensors and seal failure wires. The panel shall have lightning arrestors and a phase failure protection. A panel strip heater shall also be provided.

Additional terminals shall be provided to connect alarm, heat sensors, casing heaters, etc.

Panel Heater: The control panel shall be equipped with a panel heater to minimize the effects of humidity and condensation. The heater shall include a thermostat.

High Temperature Shutdown Switch: A high pump temperature protection circuit shall override the level control and shut down the pump motor(s) when required to protect the pump from excessive temperature. A thermostat shall be mounted on each pump casing and connected to a pump shutdown circuit. If casing temperature rises to a level sufficient to cause damage, the thermostat causes the shutdown circuit to interrupt power to the motor. A visible indicator, mounted through the control panel door shall indicate motor stopped due to high pump temperature. The motor shall remain locked out until the pump has cooled and circuit has been manually reset. Automatic reset of this circuit is not acceptable.

Transient Voltage Surge Suppressor: The control panel shall be equipped with a transient voltage surge suppressor to minimize damage to the pump motors and control from transient voltage surges. The suppressor shall utilize silicon-oxide varistors encapsulated in a non-conductive housing. The arrestor shall have a current rating of 60,000 Amps, and a Joule rating of 1500.

One-Phase Voltage Monitor: The control panel shall be equipped to monitor the incoming power and shut down the pump motors when required to protect the motor(s) from damage caused by phase reversal, phase loss, voltage unbalance, high voltage, and low voltage. An adjustable time delay shall be provided to minimize nuisance trips. The motor(s) shall automatically restart, following an adjustable time delay, when power conditions return to normal.

- (H) Wiring Channel:** When control box is to be mounted on sump cover or near to the sump, the wiring channel shall be used. Wiring channel shall provide cord grip holders for the pump cords and the control cords. The channel box shall have a removable cover for easy adjustment of cords to pumping levels required. All cords shall extend from one end of the box and be taken through conduit in sump cover to control box. No splices shall be made in the wiring channel. Continuous cords must

be used from control panel to pumps and controls. Wiring channel shall mount on supports fastened to access frame.

- (I) **Sump Level Controls:** The Contractor shall furnish and install four (4) float switches as shown on the drawings and as required for a complete and properly operating system. One (1) float shall turn off the pump(s) at the LWL (see plans), one (1) float shall start the lead pump, one (1) float shall start the lag pump if the level rises above HWL2 and one (1) float shall activate a high water alarm which shall be a flashing red light to be mounted on the outside of the pump house. The Contractor shall be responsible for setting all float switches to the elevations as shown on the plans.

The floats shall use fiber optic cable to transmit a beam of light from a transmitter in the control panel to the float where the beam makes and breaks depending on the tilt of the float. The receiver in the control panel shall detect the presence or absence of light and operate a relay in the receiver. The float shall have no electrical components or metallic wires that could cause arcs and sparks in an explosive atmosphere.

The float switch shall be mercury and lead free and shall be made of all safe, recyclable materials. The float switch housing shall be polypropylene. It shall be a simple robust device designed for many years of dependable service. The beam eclipser shall be stainless steel in an inert non-toxic dampening fluid that prevents chatter due to wave action. The viscosity of the fluid shall not change significantly over the range of -50 to +155F (-45 to +70C). The transceivers (transmitter and receiver combination) shall be dual din rail mounted units capable of connection to 2 floats. Provide one dual transceiver for every 2 floats. The fiber optic cable shall be custom made for the float and shall consist of dual plastic fibers with an overall specially blended PVC sheath for flexibility. No special tools or experience shall be required for connection of the optical cable to the transceivers. The cable shall be connected and sealed at the float housing using a double seal method that will prevent water from entering the float even if the outer sheath is damaged. The float color shall be two tone with the lighter color on the dome for easier viewing underwater when tilted up.

The transceivers shall operate in ambient temperatures of -15 to +130F (-25 to +55C). The transceivers shall operate at 12 VDC and shall be protected against accidental polarity reversal. The system shall operate in the visible and infrared light region with wavelengths between 400 and 1200 nm. The output relays in the receivers shall have the capability of being connected normally open or normally closed. The transceivers shall have a green led power-on light and red led lights on each channel indicating that the light beam is being received – float tilted up. The floats shall operate in liquid temperatures of +32 to +130F (0 to +55C). The floats shall have an ambient air standby operating temperature rating of -15 to +155C (-25 to +70C).

The float switches and transceivers shall be the Optical Float® level detection system by Cox Research and Technology, Inc., Baton Rouge, La. The dual transceivers shall be model TR2, and the floats shall be Opti-Float® model F1.

- (J) **Alarm Light:** The Station manufacturer will supply one (1) 115 VAC alarm light fixture with vapor-tight shatter resistant red globe, conduit box, and mounting base. The design must prevent rain water from collecting in the gasketed area of the fixture, between the base and globe. The high water alarm light shall be supplied in separate Nema 3 enclosure for mounting on the lift station enclosure. The alarm light shall be installed by the Contractor.

Alarm light shall glow dim at all times except under alarm conditions, then light shall glow bright and flash. Alarm bell or horn shall have silencing switch with automatic reset.

- (K) **Operation of System:** On sump level rise lower float switch shall first be energized, then upper level switch shall next energize and start lead pump. With lead pump operating, sump level shall lower to low switch turn-off setting and pump shall stop. Alternating relay shall index on stopping of pump so that lag pump will start on next operation. If sump level continues to rise when lead pump is operating, override switch shall energize and start lag pump. Both lead and lag pumps shall operate together until low level switch turns off both pumps. If level continues to rise when both pumps are operating, alarm switch shall energize and signal the alarm. If one pump should fail for any reason the second pump shall operate on the override control, alarm shall signal. All level switches shall be adjustable, for level setting, from the surface.

- (L) **Station Cover:** See specifications section XV for lift station cover.

The flashing red alarm light shall be mounted on the entrance side of the lift station cover and shall be equipped with an approved disconnect such that the red light can be readily disconnected when it is necessary to remove the station cover.

- (M) **Lift Station Pump Accessories:** Each pump in each of the lift stations as described in this section shall come complete with the following accessories.

1. **Gauge Kit:** A gauge kit shall be supplied for each pump. Suction pressure must be monitored by a glycerin-filled compound gauge, and discharge pressure by a glycerin-filled pressure gauge. Gauges to be at least 4 inches in diameter, graduated in feet water column. Rated accuracy shall be 1% of full scale reading. Compound gauge shall be graduated -34 to +34 feet water column minimum. Pressure gauge to be graduated 0 to 140 feet water column minimum.

Gauges shall be factory mounted on a resilient panel with frame assembly secured to pumps or piping. Gauge installations shall be complete with all

hoses and stainless steel fittings, including a shutoff valve for each gauge line at the point of connection to suction and discharge pipes.

2. **Automatic Air Release Valves:** All pumps shall be equipped with an automatic air release valve, designed to vent air to atmosphere during initial priming, or unattended repriming cycles. Upon completion of the priming or repriming cycle, the valve shall automatically close to prevent recirculation. A visible indication of valve closure shall be evident, and shall operate solely on discharge pressure. Valves which connect to the suction line, or rely on vacuum pumps are not acceptable.

All valve parts exposed to sewage shall be cast iron, stainless steel, or similar corrosion resistant materials. Diaphragms shall be fabric-reinforced neoprene, or similar inert material.

Valve design shall incorporate following maintenance features:

- (a) A clean-out port, at least 3 inches in diameter, shall allow easy inspection, clean-out, and service.
- (b) Valves shall be field adjustable for varying discharge heads.
- (c) Connection of the air release valves to the station piping shall include stainless steel fittings.

Automatic air release valve shall come with N.P.T. female 1" x 1" connections. Air release valves shall be manufactured by Gorman-Rupp or an approved equal manufacturer.

- (a) Model GRP33-07A or approved equal for pump discharge head range 4'-17'.
- (b) Model GRP33-07 or approved equal for pump discharge head range 18'-49'.
- (c) Model GRP33-07B or approved equal for pump discharge head range over 50'.

3. **Spare Parts Kit:** The following minimum spare parts shall be furnished with each pump station:

- (a) One (1) spare pump mechanical seal (complete with shaft sleeve).
- (b) Two (2) cover plate O-Rings.
- (c) Two (2) rotating assembly O-Rings.
- (d) One (1) set of impeller clearance adjustment shims.

4. **Casing Heater:** Each pump shall be equipped with a casing heater.

IV-3 PAINTING:

All pumps, piping, and exposed steel framework shall be cleaned prior to painting. Exposed surfaces to be coated with one coat gray W.R. non-lift primer and one coat white acrylic alkyd W.R. enamel. Paint shall be low VOC, alkyd based, high solids, semi-gloss white

enamel for optimum illumination enhancement, incorporating rust inhibitive additives. The finish coat shall be 1.0 to 1.2 MIL dry film thickness (minimum), resistant to oil mist exposure, solvent contact, and salt spray. The factory finish shall allow for over-coating and touch up after final installation.

IV-4 PIPING, VALVES, ETC.:

Discharge Piping: Discharge piping shall be Ductile Iron with flanged connections and shall meet the requirements of Federal Specifications WW-P-421c and ANSI A21.51, Class 150. Flanges shall meet the requirements of ASA Class 125 and ANSI A21.10. Gaskets for flanged joints shall be rubber with cloth inserts.

Check Valve: A full-flow discharge check valve, capable of passing a 3" spherical solid, shall be supplied for each pump. The check valve shall have a 3" removable clean-out port with o-ring seal for servicing. The suction check valve shall be mounted in suction casting so that the check valve rests on tapered seat. A spacer flange shall be installed at the suction casting so that check valve can be removed for inspection and/or replacement without disturbing the suction piping.

Gate Valve: Gate valves shall be iron body, bronze stem, rubber disc, resilient wedge seat type and shall be AWWA standard, with flanged ends. Gate Vales shall be similar and equal to the AWWA non-rising stem gate valves as manufactured by the Mueller Company. A plug or globe valve of equal construction may be substituted for the gate valve.

Air Return Piping: A scheduled 40, PVC air vent return line shall be installed in the discharge line between pump and discharge check valve. Line shall be 1" minimum diameter and shall be connected to the automatic air release valves located on each pump. Automatic air release valves shall be similar and equal to those described in Section IV-2 (M) of these specifications.

Outlet of air vent line shall discharge into wet-well and shall terminate immediately below the station slab.

IV-5 EXCAVATION AND BACKFILL:

All excavation and backfill shall be in accordance with applicable portions of Section I.

IV-6 CONCRETE:

All cast-in-place concrete shall be in accordance with applicable portions of Section II.

IV-7 WET WELL:

New Wet Wells: Precast portions of wet well shall be reinforced concrete pipe meeting the requirements of ASTM C-76-60T, Class III.

Existing Wet Wells: Wet wells for existing sewage pumping stations shall be cleaned of all trash, debris, etc. and the condition of the wet well shall be reported to the Engineer. All existing valves and piping shall be removed from the wet well and replaced with all new piping, valves, etc. All proposed valves and piping shall be cleaned, primed and painted.

IV-8 INSTALLATION:

The Contractor shall install the sewage pumping station in accordance with manufacturer's recommendations and these plans and specifications.

The Engineer will locate the plant in the field and set the Contractor a temporary bench-mark adjacent to the site. The Contractor will be responsible for determining all lines; grades and elevations therefrom.

The Contractor shall make the entire plant operative, including testing all components of discharge piping and new force main to fifty pounds per square inch (50 PSI). Should any leakage occur in the discharge piping or any leakage occur in excess of that specified in paragraph III-12 for the force main, the Contractor shall repair such. The Contractor shall arrange and adjust all controls to function at the elevations shown on the plans. The Contractor shall perform a capacity test on the plant by installing a pressure gauge on the discharge of the pumps, plugging the influent line and measuring the volume of water removed from the wet well.

IV-9 WARRANTY & TESTING:

Standard Warranty: All equipment, piping, valves, etc. shall be guaranteed free from defects in design, workmanship and material, and the Contractor shall furnish a guarantee to replace or repair, without cost to the Owner, any part or parts of any equipment proving defective in design workmanship or material within one year after equipment has received final acceptance. The fiberglass building manufacturer shall provide a 20 year warranty on the reinforced fiberglass pump station enclosure.

Extended Warranty: If the pump station is a factory assembled package station, the pump station manufacturer shall provide a 5 year warranty on all station components. Each pump station shall be factory tested, by the pump station manufacturer, on individual station requirements – including actual wetwell depths. Tests shall be performed in accordance with Hydraulic Institute standards. Tests shall be witnessed by the consulting engineer and owner, should they choose to be present.

IV-10 ELECTRICAL POWER:

The Lift Station Contractor shall arrange for the permanent electrical power at the lift station site and shall pay any required deposit, which shall be made in the Owner's name, unless there is an existing electrical meter that is to supply the electricity for the proposed lift station.

The Lift Station Contractor will be responsible for paying for the electrical bill at the meter

until such time as the Owner accepts this portion of the project as being substantially complete.

If there is an existing electrical meter which is to service the proposed new lift station, then the electrical power for constructing and testing the lift station shall be made available by the Owner at no additional charge to the Contractor.

Should there be an agreement made between the Owner and the Lift Station Contractor, for whatever reason, which would allow the Owner or another Contractor to use the lift station prior to its being accepted by the Owner, then it shall be the Lift Station Contractor's responsibility to have the electrical meter read by the Power Company or by the Resident Inspector so that the responsibility for electrical power can be separated. Otherwise, the Lift Station Contractor shall be fully responsible for the paying of the electrical bill, whether or not such power was used for his purposes.

Should, for any of the above or any other reason, the permanent power not be made available on a timely basis, it will be the Lift Station Contractor's responsibility to arrange for any necessary temporary electrical service.

IV-11 WATER FOR TESTING:

If the proposed lift station is to be constructed at a site where the Owner currently has a supply of water, then the Owner shall furnish the Lift Station Contractor the necessary water for testing at no additional cost to the Lift Station Contractor. The Lift Station Contractor should check this arrangement with the Owner or Engineer prior to bidding.

If the Owner does not have sufficient available water at the site, then it shall be the Lift Station Contractor's responsibility to furnish the necessary water for testing of the lift station.

IV-12 MEASUREMENT AND PAYMENT:

- (A) Measurement:** All work done under this section will be measured as a Lump Sum Item; which measurement shall include all excavation backfill, concrete, mechanical and electrical equipment necessary to install the sewage pumping station and place it in operation as shown on the plans and as specified herein, except the force main which will be measured by the lineal foot in place and accepted.
- (B) Payment:** The sewage pumping station as measured above, will be paid for the Contract Lump Sum Price, for Sewage Pumping Station, which price and payment shall constitute full compensation for all plant, labor, equipment and materials, including all excavation, backfill, concrete, pumps, motors, controls, piping, valves and all mechanical and electrical equipment required to install and place into operation the sewage pumping station as shown on the plans and specified herein.

END OF SECTION

SECTION V - SEWERAGE COLLECTION SYSTEM

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SECTION V - SEWERAGE COLLECTION SYSTEM

V-1 GENERAL:

The Contractor shall furnish all plant, labor, materials and equipment necessary for the construction of a sanitary sewerage collection system including excavation and backfill, pipework, manholes and miscellaneous appurtenances and perform all operations incidental to the satisfactory completion of the work as shown on the plans and specified herein.

V-2 MATERIALS:

(A) PLASTIC (PVC) PIPE, FITTINGS:

- (1) PVC gravity sewer main, open cut, shall be specifically designed to carry domestic sewerage by gravity flow and shall meet the requirements of ASTM 3034, latest revision, SDR 35 having a cell classification of 12454-B or -C, or 13364-B (with minimum tensile modulus of 500,000 PSI) as defined in ASTM 1784, and shall be supplied in 13-foot joints with integral bell to accept a rubber gasket and the end of the adjoining pipe. The minimum wall thickness shall conform to the Requirements of ASTM 3034, SDR 35 sewer pipe.

PVC gravity service line, open cut, shall be specifically designed to carry domestic sewerage by gravity flow and shall meet the requirements of ASTM 3034, latest revision, SDR 35 having a cell classification of 12454-B or -C, or 13364-B (with minimum tensile modulus of 500,000 PSI) as defined in ASTM 1784, and shall be supplied in 13-foot joints with integral bell to accept a rubber gasket and the end of the adjoining pipe. The minimum wall thickness shall conform to the Requirements of ASTM 3034, SDR 35 sewer pipe.

The pipe shall be similar and equal to Certainteed or Johns-Manville. **PIPE COLOR SHALL BE GREEN**

Note: Contractor shall provide a certification from an independent testing laboratory that the pipe to be used, meets all of the above specifications, in addition, the Owner reserves the right to random sample pipe for additional laboratory test.

- (2) **Fittings:** All fittings shall be similar and equal to the pipe used and shall be those recommended by the manufacturer or the pipe. Tees will be required at all services and saddles welded or attached to the pipe will not be acceptable.

(B) POLYETHYLENE PIPE:

Polyethylene plastic pipe shall be high density polyethylene pipe and meet the applicable requirements of ASTM F714 Polyethylene (PE) Plastic Pipe (SDR-RR) Based on Outside Diameter, ASTM D 1248, ASTM D 3550, **PE 4710**.

All pipe shall be made of virgin material. No rework except that obtained from the manufacturer's own production of the same formulation shall be used.

The pipe shall be homogenous throughout and shall be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.

Dimension Ratios: The minimum wall thickness of the polyethylene pipe shall meet the following:

<u>Depth of Cover (Feet)</u>	<u>Minimum SDR of Pipe</u>
0-16.0	17
> 16.1	11

(C) CASING PIPE:

- (1) **Steel Casing Pipe:** Steel casing pipe shall be constructed of steel plate, butt welded; welds shall be wire brushed and entire pipe cleaned and given two (2) heavy coats of asphaltum. The pipe shall have the following wall thicknesses:

Nominal Diameter	Thickness
12" through 16"	1/4"
18"	5/16"
22" and 24"	3/8"
26"	7/16"
30"	1/2"

- (2) **Asbestos-Bonded Corrugated Steel Pipe Casing:** Asbestos-Bonded Corrugated Steel Pipe Casing shall conform in all respects to ASSHO Standard Specifications M-36.

Nominal Diameter	Gauge
12" through 24"	14
30"	12

(D) DUCTILE IRON PIPE and FITTINGS:

Ductile iron pipe shall be manufactured in accordance with ANSI Specification A21.51 (AWW Standard C-151), latest revision. Pipe shall be a minimum of Class 52 and manufactured for 100 PSI working pressure and 150 PSI surge allowance.

The inside of all ductile iron piping shall be cement lined.

The outside of all above ground ductile iron piping shall be painted with one (1) coat of Coal Tar-Epoxy paint. The total Dry Film Thickness shall be 6.0-8.0 mils. The limits of the Coal Tar Epoxy application shall be all piping inside or outside of buildings or structures, to a point that is 12" before contact with ground surface.

The outside of all below ground ductile iron piping shall be painted with two (2) coats of Coal Tar-Epoxy paint. Each coat shall have a Dry Film Thickness of 6.0-8.0 mils, for a total Dry Film Thickness of 12.0-16.0 mils. The limits of the Coal Tar Epoxy application shall be all piping below or in contact with the ground surface, to a point 12" above the mean ground surface.

- (1) Mechanical joints shall conform to AWWA Standard C-111 (ANS/A-21.1).
- (2) Slip joints with rubber ring gaskets shall comply with AWWA Standard C-111 (ANSI/A-21.11).
- (3) Flanged joints shall conform to AWWA Standard C-115/A21-15, Class 125.
- (4) Fittings shall comply with AMSI/AWWA-C-111-A 21.10 for short bodied fittings rated at 150 PSI working pressure and shall be lined as specified above. Cast iron or ductile iron fittings may be used.

(E) MATERIALS FOR MANHOLES:

- (1) **Precast Reinforced Concrete Manholes:** Sections shall conform to ASTM C 478.
- (2) **Cement:** Cement for use in manhole construction, etc., shall conform to the "Standard Specifications for Portland Cement, " ASTM Serial Designation C150-61 (latest revision).
- (3) **Sand:** Sand shall be sharp, clean, free from deleterious substances and shall be uniformly graded.
- (4) **Gravel:** Gravel used in concrete work shall conform to the "Specifications for Concrete Aggregate (Tentative)," ASTM Serial Designation C33-611 (latest revision), one and one-half inches to No. 4 size.

(F) METAL CASTINGS:

Castings for manhole frames, covers and all other iron casting required for the work shall be of tough gray iron or ductile iron free from injurious defects and shall be smooth and well-cleaned by shot blasting or other approved methods.

Sanitary sewer manhole rings and covers shall conform to American Society for Testing and Materials (ASTM) A48-Class 30B, "Standard Specification for Cast Iron Castings." The ring and cover unit shall have an approximate weight of 320 pounds and be classed for heavy traffic. The casting shall be equal to US Foundry 766 Ring and CJ Cover or equal marked "Sanitary Sewer" with one vent hole pickbar (Black Asphalt Coated). A Sewer Sentry, or equal, device shall be installed in the cover.

(G) BEDDING MATERIAL:

- (1) In accordance with ASTM D-2321, latest revision for Polyvinyl Chloride (PVC) pipe.
- (2) Granular material for pipe bedding, where ordered in place by the Engineer, shall be gravel. The material shall comply with State of Louisiana, Department of Transportation and Development, Office of Highway's Specifications for gravel as described in Section No. 1003.08 Bedding Material of the "Standard Specifications for Roads and Bridges."

V-3 LAYOUT OF WORK:

The Engineer will establish the location of all sewer lines to be constructed and will set bench marks at prominent points adjacent to the work. The Contractor shall develop all grades, slopes, etc., therefrom and shall be responsible for the conformity of the work to the layout and elevation as shown on the plans.

V-4 EXCAVATION, TRENCHING AND BACKFILL:

All excavation, trenching, and backfilling shall be in accordance with the applicable portions of Section I.

V-5 OBSTRUCTION OF STREETS, SIDEWALKS, ETC.:

All material excavated shall be placed so as to interfere as little as possible with public travel. In case the street is not wide enough to allow the backfill to be piled without blocking the sidewalk, the Contractor shall, at his own expense, maintain an open passageway not less than two and one-half feet (2 ½') wide on the sidewalk and shall keep this passageway free from mud and slush.

At such street crossings and other points as may be directed by the Engineer, the trenches shall be bridged in a proper and secure manner so as to prevent any serious interruption of travel upon the roadway or sidewalk and also to afford necessary access to particular public premises. The cost of all such work must be included in the prices bid for the various items on the Contract.

The Contractor will not be permitted under any circumstances to close to vehicular traffic on both sides of a double roadway (or neutral ground) street at the same time except by special permission of the Engineer for a specified period. Alternate streets crossing the work must always be kept open.

Special care must be taken to give free access at all times and to all fire hydrants, water valves, fire alarm boxes and Police Department and Fire Department driveways.

In case the Contractor shall fail to keep open streets, sidewalks, approaches to premises, etc., and shall refuse or neglect to open them within a reasonable period of time as determined by the Engineer after written notification by the Engineer; or shall the Contractor fail to afford proper and necessary access to fire hydrants, water valves, fire alarm boxes or Police Department driveways, and shall neglect or refuse to afford such access within one (1) hour of receiving either oral or written notice to do so, the Owner is hereby authorized to do this work and deduct the actual cost thereof from any money which may be due or may become due the Contractor.

V-6 SURFACE OBSTRUCTION:

The Contractor shall exercise extreme care during excavation, backfilling, pipe laying or other operation not to disturb or injure any other pipes, conducts, cables, structures, or other underground improvements without the written approval of the Engineer. The Contractor will be required to sling, brace or otherwise maintain any of these facilities in operation at his own expense. He shall repair any damage done in a manner satisfactory to the Engineer within a reasonable time; except that the Contractor is fully responsible for any ramification of any nature resulting from any such damage.

The Contractor shall give sufficient notice to the affected utility should it be necessary to remove or disturb any of their facilities. He shall also abide fully by their regulation governing such work. The Contractor shall immediately notify the proper authorities or utility company should any damage to such facility occur during the prosecution of this work.

The Owner reserves the right to make any necessary repairs to damaged or disturbed facilities at the Contractor's expense or to allow the utility to make repairs for which the Contractor shall pay the Owner or utility the proper charges for such repairs.

The Owner or Engineer will not be liable for any claim arising based on underground obstructions being different than indicated on the plans or in the contract documents.

The Contractor shall be responsible for locating and uncovering underground obstructions sufficiently far enough in advance so that the method of avoiding may be determined before the pipe laying reaches the obstruction.

The Contractor will be governed by the instructions of the Engineer regarding pipe to be laid along state highways and the Engineer along with the applicable Highway Department will determine whether pipe shall be laid over, under or along the end of various drainage structures or facilities encountered.

V-7 SUBSURFACE OBSTRUCTIONS:

The Contractor shall exercise extreme care during excavation, backfilling, pipe laying or other operations not to disturb or injure any other pipes, conducts, cables, structures or other underground improvements without the written approval of the Engineer. The Contractor will be required to sling, brace or otherwise maintain any of these facilities in operation at his own expense. He shall repair any other damage done in a manner satisfactory to the Engineer within a reasonable time; except that the contractor is fully responsible for any such damage.

The Contractor shall give sufficient notice to the affected utility should it be necessary to remove or disturb any of their facilities. He shall also abide fully by their regulation governing such work. The Contractor shall immediately notify the proper authorities or utility company should any damage to such facility occur during the prosecution of this work.

The Owner reserves the right to make any necessary repairs to damaged or disturbed facilities at the Contractor's expense or to allow the utility to make repairs for which the contractor shall pay the Owner or utility the proper charges for such repairs.

The Owner or Engineer will not be liable for any claim arising based on underground obstruction being different than indicated on the plans or in the contract documents.

The Contractor shall be responsible for locating and uncovering underground obstructions sufficiently far enough in advance so that the method of avoiding may be determined before the pipe laying reached the obstruction.

V-8 ROAD, RAILROAD, CANAL, ETC., CROSSING:

All PVC gravity main, crossing under paved roads, shall be SDR26, jacked and bored where indicated by the Engineer.

All PVC gravity service line, crossing under paved roads, shall be SDR26, jacked and bored where indicated by the Engineer.

The Contractor shall not unreasonable block, obstruct or otherwise interfere with the normal operation of any canal, stream or other natural or artificial drainage facility and shall be fully responsible for any ramification resulting from any such damage or interference.

It should be noted that no additional compensation of any type will be paid in connection with any crossing except for extra work or materials. Pipe jacked and bored will be paid for at the unit price bid for either cased or uncased and will not be paid for again as sewer line.

V-9 PERMITS, CHARGES AND PAYMENTS:

The Owner will secure the necessary permits for crossing highways, railroads, waterways, utilities, etc., as far as is practicable. The Owner will secure said permits prior to execution of the contract between the Owner and the Contractor; however, the Owner shall not be liable for any claims by the Contractor resulting from the Owner's failure to obtain any such permit. The Contractor shall maintain strict adherence with the terms under which such permits may be issued.

The Contractor shall be required to provide any necessary or required bonds or other approved acceptable security to guarantee the appropriate railroad company, highway department or other agency the complete restoration of their respective facilities upon completion of the work.

The Contractor shall maintain the bond or security until final acceptance of the work and shall receive no reimbursement for such; the price of which shall be included in other priced bid for applicable portions of the work.

V-10 HANDLING AND DISPOSAL OF WATER AND DEWATERING:

The Contractor shall pump, bail or otherwise remove any water, either unwatering or dewatering, which may be found or may accumulate in the excavations, and shall perform all work necessary to keep them clear of water while the work is in progress. The Contractor shall dewater as required to sustain the piezometric level a minimum of one foot (1 ft.) below grade line during excavation, pipe laying and until all backfill is replaced. The cost of removing water by pumping, dewatering, or otherwise shall be included in the prices bid for various items of the work.

The Contractor shall keep all sewers and appurtenances free from water until acceptance by whatever means are required and shall be solely responsible for any ramifications resulting from raising and lowering ground or surface waters.

The Contractor is cautioned of his responsibility to all other parties regarding his liability with respect to water originating on his work, water for which he is obligated to handle and dispose under this contract, and disturbance to any existing drainage by his operations.

V-11 LAYING AND JOINTING SEWER PIPE:

- (A) General:** The Contractor shall provide the necessary machines, lines and supports to ensure installation of the pipe to the lines and grades as shown on the plans. The grade lines shall be established in the trench, by the use of sewerage system lasers with control procedures as recommended by manufacturers or equipment. If pipe

systems with vaporine glues are used, adequate line blowers will be required to remove fumes from curing joints that tend to defract the laser beam. At any stage of construction of a straight stretch between any two consecutive manholes, the starting end of the pipe shall be clearly visible on looking through the pipe from the other end, with full cross section of the interior of the pipe in clear view.

All pipe and accessories shall be transported and handled in such a manner as to ensure that they are delivered and installed in a sound and undamaged condition. Couplings and rubber gaskets shall be adequately stored to prevent damage and shall be kept clean of oil, grease or other deleterious substances and kept away from excessive heat.

Immediately before placing pipe in the trench, it shall be examined for any defects and cleaned and freed from any dirt or foreign material. Any defective pipe shall be promptly removed from the site.

All pipe bedding shall be Class B except where special bedding in gravel, sand, etc. is directed by the plans or by the Engineer or his authorized representative. All Class B bedding shall require bell holes and trench preparation as specified in Section I and select backfill shall be carefully placed around the pipe barrel including under the haunches and lightly hand tamped until this material is a minimum of six inches (6") above the crown of the pipe. The remainder of the trench can then be machine backfilled. Except as otherwise specified herein, all pipe shall be installed in accordance with the manufacturer's instructions and recommendations.

When work is suspended either for the night or for any other reasons, all open ends shall be securely and adequately plugged to prevent the entrance of foreign materials or trench water. While pipe laying is in progress the Contractor shall keep the trench free of water.

- (B) Jointing Pipe:** The surfaces shall be wiped free of dust, dirt, gravel or other foreign materials before the application of the lubricant sealer as recommended by the pipe manufacturer. The spigot end shall then be centered on grade into the bell end of the last downstream pipe length and properly sealed with the application of a moderate force by a pry or lever device of the type recommended by the pipe manufacturer. The lubricant sealer shall be applied immediately before jointing and not allowed to dry before jointing.

Extreme care shall be taken that joining operations do not disturb pipe previously laid.

V-12 INSTALLING PIPE-JACKING AND BORING METHODS:

All PVC gravity main, crossing under paved roads, shall be SDR26, jacked and bored where indicated by the Engineer.

All PVC gravity service line, crossing under paved roads, shall be SDR26, jacked and bored where indicated by the Engineer.

Where indicated on the plans or directed by the Engineer the Contractor shall install pipe by jacking and boring through embankments or beneath roads, utilities, etc.

If such jacked and bored pipe is for gravity sewer flow, then the Contractor must maintain the exact grade and alignment as for other sections of the system.

The Contractor shall be liable for and shall immediately repair and restore to its original condition, any damage to roads, etc., under which he is jacking and boring.

V-13 INSTALLING PIPE - DIRECTIONAL DRILL METHODS:

See Section XVII

V-14 MANHOLES, CLEAN-OUTS, ETC.:

Manholes shall be constructed either of pre-cast concrete manhole sections or Monolithic Pour Concrete Manholes.

Manhole frames shall be set in relation to the finished grade as shown on the plans. All frames shall be set horizontally and shall be set in and secured by cement mortar.

Inverts and bottom curves shall be built accurately and shall be so formed as to facilitate the smooth entrance and flow of sewage into, through, and from the manhole. Only the highest quality workmanship will be accepted with respect to the formed flow channels in the manholes.

Special Attention Note: On the interior of all sewer manholes, the annular space between the outside of all incoming and/or outgoing gravity sewer lines and the interior wall and/or bottom channel of the sewer manhole shall be fully grouted with non-shrink waterplug grout. This shall be done even if the sewer manhole is fitted with a cast-in-place boot, to connect to the gravity sewer lines. All grout shall be hand troweled to provide a smooth, neat appearance, free of voids, pock marks, etc.

Clean-outs, etc. shall be constructed of the materials and in conformity as shown on the plans.

V-15 SERVICE CONNECTIONS:

The Contractor shall provide all plant labor, equipment and materials necessary to install all house or service connections as shown on the plans or as specified herein.

The openings of each branch shall be plugged by a stopper of the same materials and jointing devices as the pipe and fittings unless the service line is constructed at the same time as the branch is laid, at which time the end of each service line shall be plugged with a stopper.

(A) Service Connection for One (1) Residence:

- (1) Sewer Main Less Than Eight Feet (8') Deep:** A single house service connection where the invert of the Gravity Sewer Main is less than eight feet (8') below the street surface shall include an (8"x4") Service Wye. Joined to the Service Wye shall be a sufficient length of four-inch (4") service line, installed on a constant slope of not less than one percent (1%) that will result in the house connection being a minimum of approximately three and one-half feet (3 ½') deep at the property line. A four-inch (4") sewer clean-out and clean-out box shall be installed at the property line.
- (2) Sewer Main Greater Than Eight Feet (8') Deep:** A single house service connection where the invert of the Gravity Sewer Main is greater than eight feet (8') below the street surface shall include an (8"x6") Service Wye and a sufficient length of six-inch (6") riser pipe placed vertically. Joined to the vertical riser pipe shall be a sufficient length of six-inch (6") service line that shall be installed on a slope of not less than one percent (1%) that will result in the house connection being a minimum of approximately three and one-half feet (3 ½') deep at the property line. The six-inch (6") service line shall transition to a four-inch (4") service line at the property line. A four-inch (4") sewer clean-out and clean-out box shall be installed at the property line. The riser pipe shall be encased in coarse sand as shown on the Sewer Collection Details of the plans.

(B) Service Connection for Two (2) Residences on Same Side of Street:

- (1) Sewer Main Less Than Eight Feet (8') Deep:** A two (2) house service connection where the invert of the Gravity Sewer Main is less than eight feet (8') below the street surface shall include an (8"x6") Service Wye. Joined to the Service Wye shall be a sufficient length of six-inch (6") service line, installed on a constant slope of not less than one percent (1%) that will result in the house connection being a minimum of approximately three and one-half feet (3 ½') deep at the property line. Two (2) (6"x4") Service Wyes shall be installed at the property line. A four-inch (4") sewer clean-out and clean-out box shall be installed at the property line for each residence connected to the sewer system.
- (2) Sewer Main Greater Than Eight Feet (8') Deep:** A two (2) house service connection where the invert of the Gravity Sewer Main is greater than eight feet (8') below the street surface shall include an (8"x6") Service Wye and a sufficient length of six-inch (6") riser pipe placed vertically. Joined to the vertical riser pipe shall be a sufficient length of six-inch (6") service line that shall be installed on a slope of not less than one percent (1%) that will result in the house connection being a minimum of approximately three and one-half feet (3 ½') deep at the property line. Two (2) (6"x4") Service Wyes shall be installed at the property line. A four-inch (4") sewer clean-out and clean-

out box shall be installed at the property line for each residence connected to the sewer system. The riser pipe shall be encased in coarse sand as shown on the Sewer Collection Details of the plans.

(C) Service Connection for Two (2) Residences on Opposite Sides of Street:

- (1) Sewer Main Less Than Eight Feet (8') Deep:** A two (2) house service connection where the invert of the Gravity Sewer Main is less than eight feet (8') below the street surface shall be installed as described in Section V-14(A)(1).
- (2) Sewer Main Greater Than Eight Feet (8') Deep:** A two (2) house service connection where the invert of the Gravity Sewer Main is greater than eight feet (8') below the street surface shall include an (8"x6") Service Wye and a sufficient length of six-inch (6") riser pipe placed vertically. Joined to the vertical riser pipe shall be a double six-inch (6") Wye and a sufficient length of six-inch (6") service line that shall be installed on a slope of not less than one percent (1%) that will result in the house connection being a minimum of approximately three and one-half feet (3 ½') deep at the property line on either side of the street. The six-inch (6") service line shall transition to a four-inch (4") service line at the property line on either side of the street. A four-inch (4") sewer clean-out and clean-out box shall be installed at the property line for each residence connected to the sewer system. The riser pipe shall be encased in coarse sand as shown on the Sewer Collection Details of the plans.

V-16 TESTING GRAVITY SEWERS:

All lines, both gravity and pressure, shall be tested by the Contractor prior to final acceptance. All testing will be witnessed by the Engineer and records of tests shall be recorded by the Contractor and presented to the Engineer before the lines will be accepted. The Contractor shall provide whatever labor and equipment is necessary to perform the tests, and the cost shall be included in the prices bid for the various items.

- (A) Lamping Gravity Sewers:** Gravity sewers shall be lamped with mirrors, light or laser beam to verify accuracy or alignment. Generally the full diameter of the pipe shall be visible when viewed between consecutive manholes. No lines will be accepted unless at least one-half of the diameter is visible and this condition shall not be prevalent.
- (B) Leakage Testing of Gravity Sewers:** Points of measurement of leakage shall be as selected by the Engineer. Any obvious or excessive leaks in the new sewers shall be repaired immediately upon discovery. The cost for performing leakage tests and for repairing faulty work, shall be included in the prices bid for installing sewers.

When in the opinion of the Engineer, the water table is two feet (2') above the top of the sewer pipe, the method of testing may be either low pressure air exfiltration, or water infiltration.

The cost of repairing faulty work, for the furnishing of weirs, pneumatic testing equipment, and for performing all tests or retests required, shall be included in the prices bid for installing sewers.

- (1) **Water Infiltration Test:** At no point in new portions of the sewage collection system shall the infiltrations of leakage of ground water measured by weirs, exceed the amount as follows:

Based upon weir measurement, the infiltration of ground water leakage contribution to the flow at any point shall not exceed fifty (50) gallons per mile per day per inch diameter.

All lines including branch service lines shall be in place at the time of testing.

- (2) **Low Pressure Air Exfiltration Test:** Low pressure air exfiltration test shall utilize a system of air supply, two (2) air-inflated pipe stoppers, pressure gauge, stop watch, hoses, cables, and incidentals equal to that manufacturer by Cherne Industrial, Inc., in Hopkins, Minnesota.

Tests shall be performed on an entire section between adjacent manholes. The section shall be pressurized with air to four (4) pounds per square inch in excess of the ground water pressure above the top of the sewer and allowed to stabilize for not less than two (2) minutes. After pressure stabilization, the permissible time for the pressure to drop one pound per square inch from three and one-half (3.5) to two and one-half (2.5) p.s.i., shall not be less than one (1) minute. If the pressure will not stabilize or the duration of this one (1) p.s.i. loss is less than one (1) minute, the leak or leaks shall be located and repaired.

If the Low Pressure Air Exfiltration Test is used, each manhole shall be subject to a hydrostatic exfiltration test by filling each manhole to the top with water and, after waiting the specified time (usually 4 hours) water shall be added as required to refill the manhole and the amount of water measured by an approved means and this amount shall be considered the leakage from the manholes.

The leakage of any manhole shall not exceed 1 gallon per day per foot of diameter per foot of depth of water in the manhole.

- (3) **Water Exfiltration Test:** This method of measurement will generally be used to test all sewers. The collection system shall be broken into sections as determined by the Engineer for testing and each section filled with water to the top of the lowest manhole in that section. The system shall be allowed to

stand for the specified period of time, usually 4 hours, and then water shall be added as required to return the level to its original position. The amount of water required to refill the system shall be measured by an approved means and this amount shall be the leakage.

At the time of testing, all 6-inch, branch lines shall be in place and shall be tested along with the main lines and manholes; however, only the main lines and branch lines (not the manholes) shall be considered in calculating the leakage rate.

The calculated leakage shall not exceed 200 gallons per day per mile per inch of diameter.

Any obvious excessive leaks in the system shall be repaired immediately upon discovery. Costs for repairing faulty work, including re-excavating and re-backfilling for making tests, shall be included in the price bid for installing sewers.

All water required for testing will be procured, transported and handled by the Contractor at no additions cost to the Owner and all cost incidental thereto shall be included in the price bid for the other items of work.

V-17 DROP MANHOLE:

Drop connections shall be constructed as indicated on the Plans. In general, drop connections are to be built whenever the invert of the incoming sewer is higher than two (2) feet above the invert of the outgoing sewer. The drop pipe and fittings shall be encased in masonry or concrete integral with or securely bonded to the manhole and extending from the manhole base to a point six (6) inches above the incoming sewer.

V-18 SEPARATION OF WATER AND SEWER MAINS:

The Contractor shall maintain a minimum horizontal clearance of 6 feet and a minimum vertical clearance of 18" between water and sewer mains.

V-19 MEASUREMENT AND PAYMENT:

(A) GRAVITY SEWER PIPE:

- (1) Gravity Sewer Lines: Pipe will be paid for by the linear foot according to size, type, and depth as follows: 0-6 ft. deep, then in two foot increments; i.e., 6-8 ft. deep, etc.
- (2) Measurement for the lengths of sewers will be horizontally to the nearest foot from center to center of manholes and from the center of manholes to end of pipe without deduction for fittings or manholes. The average depth will ordinarily be calculated from elevations taken approximately fifty (50) feet apart on the ground surface or pavement before its is disturbed and from the

elevations of invert of the sewer directly below. The average depth will be the summation of the depths taken, divided by the number of depths taken, from manhole to manhole.

If either the ground surface or the elevation of the sewer is very irregular (as in the case of crossing under embankment) the elevation will be taken at extreme points and closer together as may be necessary.

The average depth of sewer crossing under a waterway or an open canal will be calculated below a straight line joining the natural surface on both banks; the average depth under a closed canal or a track will be calculated below the actual ground surface. A normally dry excavation or depression not in use as a canal or waterway will not be regarded as a canal; the actual ground surface will be used in calculating the depth of the sewer.

Special crossings for which drawings have been made and/or on which a special price has been asked, whether a lump sum bid or otherwise, will be paid for according to the special specifications governing said crossings (i.e., gravity sewer main jack and bore, gravity sewer main jack and bore with steel casing creek crossing, etc.).

- (3) The actual total lineal feet of sewer pipe installed, tested, and accepted, measured as provided above, will be paid for at the contract unit price bid for sewer pipe of the various sizes and classifications at the various depths, which price and payment shall constitute full compensation for furnishing, hauling and installing the pipe complete; for all excavation, sheeting and bracing (except sheeting and bracing left in place and paid for under other items), backfill and compaction, clean-up; and for the furnishing of all equipment, tools, labor and incidentals necessary for the satisfactory completion of the work in accordance with Plans and as specified herein.

(B) SERVICE CONNECTIONS:

- (1) **Measurement:** Service connections will be paid for by the actual count per each. Contractor shall include all items relative to service connections in this pay item. This may include, but not be limited to fittings, clean-outs, caps, bedding material, etc. Contractor shall make house connection as per plans and shall make provisions to accept all household discharge (i.e., dishwashers, clothes washers, water closets, etc.) into the new service line.
- (2) **Payment:** Service connections placed and accepted, measured as provided above, will be paid for at the contract unit price bid for service connections, which price and payment shall constitute full compensation for furnishing, hauling, and installing complete; for all excavation, sheeting and bracing, backfill, compaction, and for the furnishing of all equipment, tools, labor, and incidentals necessary for the satisfactory completion of the work in accordance with Plans and as specified herein.

(C) SERVICE PIPE:

- (1) Service Pipe will be paid for by the lineal foot according to size and type.
- (2) **Measurement:** Service pipe will be measured by the lineal foot and length for measurement shall be the horizontal distance to the nearest foot, from the center of the sewer to the end of the connection at or near the property.
- (3) **Payment:** The actual total lineal feet of Service Pipe installed and accepted, measured as provided above, will be paid for at the contract unit price per lineal foot, which price and payment shall constitute full compensation for furnishing, hauling, and installing the pipe complete; for all excavation, sheeting and bracing, backfill and compaction, clean-up; and for the furnishing of all equipment, tools, labor and incidentals necessary for the satisfactory completion of the work in accordance with Plans and as specified herein.

(D) STANDPIPE OR RISER PIPE (STACKS):

- (1) Standpipe or Riser Pipe will be paid for under the Service Pipe Bid Item.
- (2) **Measurement:** Standpipe or Riser Pipe will be measured vertically to the nearest foot from the invert of the main sewer to the invert of the service line without deduction for fittings. All various fittings required for a complete installation of all riser pipes shall be included in the bid price of the pipe, except for those fittings specifically listed in the BID FORM.
- (3) **Payment:** Standpipe or Riser Pipe, placed and accepted as provided above will be paid for at the contract unit price per lineal foot, under the Service Pipe Bid Item, which price and payment shall constitute full compensation for furnishing, hauling, and installing complete; for all fittings, excavation, forming and bracing, concrete work, backfill and compaction, and for the furnishing of all equipment tools, labor and incidentals necessary for the satisfactory completion of the work in accordance with Plans and as specified herein.

(E) PIPE FITTINGS:

- (1) **Measurement:** Pipe fittings will be measured by an actual count of fittings of the various types and sizes installed and accepted. Pipe stoppers where required shall be included in the bid price of the pipe. Only the fittings listed in the BID FORM will be measured for payment. All other fittings required will be included in the bid price of the pipe.

- (2) **Payment:** Pipe fittings placed and accepted, measured as provided above, will be paid for at the contract unit price bid for the various types and sizes, which price and payment shall constitute full compensation for furnishing, hauling, and installing complete; for all excavation, backfill and compaction, and for the furnishing of all equipment, tools, labor and incidentals necessary for the satisfactory completion of the work in accordance with the Plans and as specified herein.

(F) INSTALLING PIPE - JACKING AND BORING METHOD:

- (1) Installing Pipe - Jacking and Boring Method - will be paid for by the lineal foot according to size of pipe to be bored.
- (2) **Measurement:** Pipe installed by the jacking and boring method will be measured by the lineal foot measured to the nearest foot, from the point of entrance of the embankment to the point of exit; both measured along the springline of the pipe.
- (3) **Payment:** The cost of installing by the jacking and boring method measured as provided above, will be paid for at the contract unit price bid for installing pipe of various diameters, which price and payment shall constitute full compensation for installing complete; for all excavation boring, jacking, and backfilling; and for furnishing all equipment, tools, labor and incidentals, and the performance of all work necessary for the satisfactory completion of the work in accordance with the plans and as specified herein.

(G) INSTALLING PIPE – HORIZONTAL DIRECTIONAL DRILL METHOD:

- (1) Installing Pipe – Horizontal Directional Drill Method - will be paid for by the lineal foot according to size of pipe to be horizontal directional drilled.
- (2) **Measurement:** Pipe installed by the horizontal directional drill method will be measured by the lineal foot measured to the nearest foot, from the point of entrance of the embankment to the point of exit; both measured along the springline of the pipe.
- (3) **Payment:** The cost of installing by the horizontal directional drill method measured as provided above, will be paid for at the contract unit price bid for installing pipe of various diameters, which price and payment shall constitute full compensation for installing complete; for all excavation, drilling, and backfilling; and for furnishing all equipment, tools, labor and incidentals, and the performance of all work necessary for the satisfactory completion of the work in accordance with the plans and as specified herein.

(H) CASING PIPE - JACKING AND BORING METHOD:

- (1) The Contractor shall install pipe casings by jacking and boring method, as indicated on the Plans, to receive the sewer carrier line. The Contractor will be paid on the basis of the unit price bid for furnishing and installing the Sewer Pipe in addition to the unit price bid under this item for furnishing and installing the casing.
- (2) **Measurement:** Casing pipe, installed and accepted will be measured by the lineal foot. The quantity obtained will be the centerline length of the casing installed and accepted.
- (3) **Payment:** The actual total lineal feet of casing, installed and accepted, measured as provided above, will be paid for at the contract unit prices bid for casing pipe of various diameters, which price and payment shall constitute full compensation for furnishing, hauling and installing complete, for all excavation, boring, jacking, and backfilling; and for furnishing all equipment, tools, labor and incidentals and the performance of all work necessary for the satisfactory completion of the work in accordance with the plans and as specified herein. The sewer carrier line pipe which goes through the casing shall be paid for as "Gravity Sewer Main".

(I) CASING PIPE - LAID IN OPEN CUT:

- (1) The Contractor will install pipe casing, laid in open cut, to receive the sewer carrier line according to Specifications and as indicated on the Plans. The Contractor will be paid on the basis of the unit price bid for furnishing and installing the sewer pipe in addition to the unit price bid under this item for furnishing and installing the casing.
- (2) **Measurement:** Casing Pipe installed and accepted, will be measured by the lineal foot. The quantity obtained will be the center-line length of the casing installed and accepted.
- (3) **Payment:** The actual total lineal feet of casing, installed and accepted, measured as provided above, will be paid for at the contract unit price bid for casing pipe of various diameters, which price and payment shall constitute full compensation for furnishing, hauling and installing complete, for all excavation and backfilling; and for furnishing all equipment, tools, labor and incidentals and the performance of all work necessary for the satisfactory completion of the work in accordance with the plans and as specified herein. The sewer carrier line pipe which goes through the casing shall be paid for as "Gravity Sewer Main".

(J) STANDARD SANITARY SEWER MANHOLES:

- (1) Standard Sanitary Sewer Manholes will be paid for by the actual count per each according to depth, 0-6 ft., 6-8 ft., 8-10 ft., 10-12 ft., etc.
- (2) **Measurement:** Manholes will be measured by the vertical foot and the depth for measurement will be from the top of the manhole casting to the invert of the deepest sewer connecting therewith.
- (3) **Payment:** The actual number of manholes installed and accepted, measured as provided above, will be paid for at the contract unit price bid per each for manholes to the various depth defined, which price and payment shall constitute full compensation for furnishing, hauling and installing all materials complete; for all excavation, sheeting and bracing (except Sheeting and Bracing Left in Place and paid for under other items), backfill and compaction, clean-up; and for the furnishing of all equipment, tools, labor and incidentals necessary for the satisfactory completion of the work in accordance with the plans and as specified herein.

(K) DROP SANITARY SEWER MANHOLES:

- (1) Drop Sanitary Sewer Manholes will be paid for by the actual count per each according to depth, 0-6 ft., 6-8 ft., 8-10 ft., 10-12 ft., etc. All necessary drop inlet piping, fittings and concrete or masonry encasement that connects various sewer lines to the manhole shall be included as a part of the Drop Sanitary Sewer Manhole.
- (2) **Measurement:** Drop manholes will be measured by the vertical foot and the depth for measurement will be from the top of the manhole casting to the invert of the deepest sewer connecting therewith.
- (3) **Payment:** The actual number of drop manholes installed and accepted, measured as provided above, will be paid for at the contract unit price bid per each for drop manholes to the various depth defined, which price and payment shall constitute full compensation for furnishing, hauling and installing all materials complete, including all drop inlet piping, fittings and concrete or masonry encasement that connects various sewer lines to the manhole; for all excavation, sheeting and bracing (except Sheeting and Bracing Left in Place and paid for under other items), backfill and compaction, clean-up; and for the furnishing of all equipment, tools, labor and incidentals necessary for the satisfactory completion of the work in accordance with the plans and as specified herein. Drop piping will not be paid again as gravity sewer pipe as described in Section V-19 (A) above.

(L) GRAVEL, SAND OR SPECIAL BEDDING:

- (1)** Gravel Bedding, Sand Bedding, or other Special Bedding will usually be included in the Bid Items; however, the location of these materials may or may not be shown on the plans and the requirement of their use will generally be determined in the field as dictated by the soil conditions encountered. The Contractor is hereby notified that the Quantity shown in the Bid Items is only estimated and the amount required may vary widely from that estimated and that possibly none of the material will be required. The Contractor is also hereby notified that any price adjustment that may be specified for increases or decreases in the quantities above or below the estimated quantity do not apply to this item and all material used will be a the unit price bid.
- (2) Measurement:** All special bedding material used when directed by the Engineer will be measured by the Cubic Yard (CY) and will be by the vehicular method upon presentation of a suitable invoice from the supplier signed by the Engineer, his authorized representative or a representative of the Owner.
- (3) Payment:** All special bedding material, measured as above, in place and accepted will be paid at the Contract Unit Price Bid for the various type of material, which price and payment shall constitute full compensation for furnishing, hauling, storing, installing and all other operations, including extra excavation required and all other labor requirements and incidentals necessary for the satisfactory completion of the work as shown on the plans and as specified herein.

State of Louisiana Safe Drinking Water Program

Low lead requirements in plumbing and potable water distribution systems:

Concentrations of lead found in drinking water do not typically derive from natural sources. Instead, the most common cause of lead concentrations in potable water is contamination from the gradual corrosion of water supply pipes and plumbing fixtures as well as the solder, or flux, used for installation and repair. Most current regulatory efforts to control lead in drinking water focus primarily on reducing the lead content of these system components.

On June 29, 2011, Gov. Bobby Jindal signed Louisiana House Bill 471 and enacted Act Number 362. This Act takes effect January 1, 2013, and prohibits the use, installation, repair, introduction into commerce, or sale of pipes, fittings, fixtures, solder, or flux that are not "lead free" when used for conveying water for human consumption.

The Department of Health and Hospitals (DHH) has prepared this fact sheet to help clarify how Act 362 redefines "lead-free" and how these new, lowered lead limits will affect various components used in the construction of new and existing plumbing and water distribution projects. In addition, this fact sheet will describe the key components of implementation including code development, applicable performance and material standards, enforcement and exceptions.

Reduced Lead Requirements of Act 362 (effective January 1, 2013):

Under Act 362, the lead content of pipes, fittings and fixtures will be reduced from not more than 8.0 percent lead to not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures.

All pipe, plumbing fittings and fixtures, solder or flux used in the installation or repair of any public water system or any plumbing in a facility providing water for human consumption must meet the new low lead requirements, except when necessary for the repair of leaded joints of cast iron pipes.

EXCEPTIONS: The following materials are not required to meet the reduced lead requirements of Act 362:

- ▶ Pipes, pipe fittings, plumbing fittings or fixtures, including backflow preventers, which are used exclusively for non-potable services such as manufacturing, fire sprinkler system, industrial processing, irrigation, outdoor watering or any other uses where the water is not anticipated to be used for human consumption; or
- ▶ Toilets, bidets, urinals, fill valves, flushometer valves, tub fillers, shower valves, showers, safety shower flushes, service saddles or water distribution main gate valves that are two inches in diameter or larger.
- ▶ Materials purchased or acquired by a public water system prior to January 1, 2013, can continue to be utilized until January 1, 2014.

In addition to the installation requirements, no person shall introduce into commerce any pipe, pipe or plumbing fitting or fixture intended to convey or dispense water for human consumption through drinking or cooking that is not lead-free, including kitchen faucets, bathroom faucets or any other end-use devices intended to convey or dispense water for human consumption through drinking or cooking.

Louisiana Administrative Code (LAC) Updates:

These new low-lead requirements will be published in Parts XII (Water Supplies) and XIV (Plumbing)

OVER



Louisiana Lead Reduction **FACTS** *(continued)*

of LAC Title 51 (Sanitary Code). Under Parts XII and XIV, all applicable potable water piping, fixtures, pipe related products and materials that join or seal pipes shall be evaluated and listed as conforming with NSF/ANSI 372-Drinking Water System Components, Lead Content or shall be certified to be lead-free by an independent American National Standards Institute (ANSI)-accredited third party testing laboratory, inspection agency or other organization concerned with product evaluation.

Enforcement:

The enforcement of the lead reduction law will be handled during plan reviews, permit inspections, surveys, complaints, etc. For plumbing-related violations, the enforcement will typically be handled at the local level in accordance with their ordinances, laws or other regulations. When handled at the state level, the enforcement process will be in accordance with Part 1 of LAC Title 51.

Potential Health Effects of Lead Exposure:

- ▶ Lead is a neuro-toxic metal that accumulates in both soft tissue and bones. Even low-level exposure can lead to a range of adverse health effects, including brain, nervous system and blood disorders.
- ▶ Children and Infants— Exposure can result in delays in physical or mental development, reduced intelligence, learning disabilities, attention deficit disorder, behavioral problems, stunted growth, impaired hearing and kidney damage.
- ▶ Adults— Exposure can result in kidney problems, high blood pressure, nerve disorders, fertility problems, muscle and joint pain, irritability, memory and concentration problems. Pregnant women can pass lead contained in their bodies to their fetuses.

Highlighted Facts:

- ▶ Act 362 Becomes Effective January 1, 2013.
- ▶ Prohibits the use, installation or repair, introduction into commerce, or selling of pipes, fittings, fixtures, solder, or flux that is not "lead-free" when used for conveying water for human consumption.
- ▶ Pipes, fittings and fixtures that are used exclusively for non-potable services are not required to meet the reduced lead requirements of Act 362.
- ▶ Materials purchased or acquired by a public water system prior to January 1, 2013 can continue to be utilized until January 1, 2014.
- ▶ All applicable piping, fixtures, pipe-related products and materials that join or seal pipes shall be evaluated and listed as conforming with NSF/ANSI 372-Drinking Water System Components, Lead Content or shall be certified to be lead free by an independent ANSI-accredited third party testing laboratory.

State of Louisiana

Safe Drinking Water Program

Department of Health and Hospitals

Office of Public Health

628 N. 4th Street

Baton Rouge, LA 70802

Phone: 225-342-7499

Fax: 225-342-7303

www.dhh.la.gov/SafeDrinkingWater

END OF SECTION

SECTION VII
CLEAN-UP, REPAIRS, ETC.

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SECTION VII

CLEAN-UP, REPAIRS, ETC.

VII-1 GENERAL:

The scope of the work required by this section includes cleaning-up of all areas in which the Contractor has worked, repairing all property, both public and private, which has been damaged, disturbed, altered, etc., by the Contractor's operations; protection of property to prevent undue damage; and maintenance of necessary access to and across the work area.

VII-2 PROTECTION, REMOVAL AND REPLACEMENT OF EXISTING FACILITIES:

The Contractor will be required to work around existing facilities, including but not limited to buildings, utilities, fences, roads, streets, sidewalks, etc., and will, in some cases, be required to remove and replace, or reinstall such.

The Contractor shall exercise care not to damage any such property and shall be fully responsible for any such damages, whether to the Owner's property or other property and does hereby indemnify the Owner of any responsibility from such damages.

Any property removed, shall be replaced such that, after replacement, it shall be similar and equal in all respects to that removed.

VII-3 PROTECTION OF PROPERTY:

The Contractor shall be responsible for protecting all property, both private and public, and shall be responsible for any damages to such including damages or blockage to streets, alleys, adjacent property, etc., and shall be responsible for the stoppage or diversion of any surface waters, rainfall, etc., and does hereby indemnify the Owner of any responsibility from such damages.

VII-4 CLEAN-UP:

The Contractor shall, after acceptance of the various items of work, neatly clean all his work area, including any access areas, such that after clean-up, the areas will be in a neat manner and shall be in at least an equal condition as when the Contractor started his operations.

VII-5 REPAIRS TO ROADS, STREETS, ETC.:

ANY EXISTING ASPHALT TO BE REMOVED SHALL BE SAWCUT THE FULL DEPTH OF THE EXISTING ASPHALT, PRIOR TO ANY EXCAVATION ACTIVITY.

The Contractor shall repair any and all damage to roads, streets, etc., occurring as a result of his operations. All construction methods, materials, etc., shall be strictly in accordance with state, parish (county), or local specifications or codes as applicable, and the Contractor shall replace or repair such to the satisfaction of the applicable governing body and the Engineer.

VII-6 REPAIR AND MAINTENANCE OR REPLACEMENT OF FENCES, LAWNS, DRIVEWAYS, ETC.:

The Contractor shall repair or replace any and all damage or alterations to fences, lawns, or other property as a result of his operations. All such repair or replacement shall be performed such that the finished product shall be in a condition at least equal to that prior to its damage or removal, all as determined by the Engineer.

The Contractor shall maintain such temporary fencing, gates, etc., as is required to protect livestock, etc., at all times during his operations and shall be fully responsible for any and all damages to such as a result of his negligence.

The Contractor shall exercise due care with respect to damage to lawns, sidewalks, driveways, entrances, etc., and shall maintain access to all property, both public and private, at all times. The Contractor shall promptly repair any such damages to the satisfaction of the Engineer.

VII-7 RESPONSIBILITY OF CONTRACTOR:

Should the Contractor fail to repair or replace any damages as specified herein or should he fail to maintain any access, or to properly protect any property, all as specified herein, within a reasonable time as determined by the Owner, the Owner hereby reserves the right to perform, or to have performed for him, such work and deduct the cost thereof from any monies due or which shall become due to the Contractor.

VII-8 MEASUREMENT AND PAYMENT:

No separate measurement or payment will be made for any of the items covered in this Section and all cost thereof shall be included in the prices for the other items of work.

END OF SECTION

SECTION VIII - ELECTRICAL

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SECTION VIII - ELECTRICAL

VIII-1 GENERAL REQUIREMENTS:

- (A) **Related Documents:** The electrical specifications contained in this section shall be used in conjunction with the other applicable sections /of the Technical Specifications as well as the General Conditions, Supplemental General Conditions (if any) and Special Conditions (if any). This shall include but not necessarily be limited to Sections titled "Clearing and Grubbing, Excavation, Backfill and Compacted Fill", "Concrete", "Surface Preparation and Painting", etc.
- (B) **Scope:** The work under this section includes furnishing and installing all wires, conductors, cables, conduit and conduit fittings, underground ducts, wiring devices, junction and outlet boxes, switchboards, panelboards, circuit breakers, fuses, time switches, photo-electric control switches, relays, contactors, safety switches, lighting fixtures, lamps, cabinets, motor control centers, dry-type transformers, lightning arresters, ground rods, grounding connections, and all other equipment specified or necessary for a complete installation.

Included in the work shall be all power wiring for and connection of equipment specified elsewhere and/or as shown on the plans.
- (C) **Cutting and Patching:** All cutting and patching for electrical shall be in accordance with the General Conditions or as shown on the plans.
- (D) **Drawings:** All outlets shown on electrical drawings are located approximately only. Contractor shall refer to plans for all necessary dimensions. Contractor shall refer to structural and mechanical drawings as well as equipment manufacturer's shop drawings and roughing-in drawings and adjust his work accordingly to provide a coordinated installation.
- (E) **Laws and Permits:** The Louisiana Building Code, the current edition of the National Electrical Code (NFPA No. 70), and the OSHA Code of Federal Regulations shall be considered a part of these specifications and all pertinent articles will not be repeated herein.

Unless more rigid requirements are indicated hereinafter or on drawings, all work shall conform to or exceed the requirements of the above codes.

Contractor shall apply for all permits and pay all inspection fees incidental to electrical work.

No work shall be concealed until approved by the State or local inspectors, and all State and local regulations shall be adhered to.

- (F) **Visiting Site:** The bidder shall visit the site of proposed work so that he may understand the facilities, difficulties, and restrictions attending the execution of the contract. He will be allowed no additional compensation for failure to be so informed.
- (G) **Guarantee:** Contractor shall guarantee all equipment, materials and workmanship for one (1) year after the Warranty begins as described in the Contract Documents.

VIII-2 MATERIALS:

- (A) **General:** All equipment and materials shall be new and shall be listed by Underwriter's Laboratories, Inc., in categories for which standards have been set by that agency. Methods of installation shall be in full accord with the latest and best electrical and mechanical engineering practices.
- (B) **Brand Names:** Whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturer's or vendor's names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article or piece of equipment of other manufacturers or vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article or piece of equipment so proposed is, in the opinion of the Engineer, of equal substance, appearance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.
- (C) **Submittals:** Contractor shall submit for review descriptive literature or shop drawings for the following material which he proposes to use:

- Switchboards
- Panelboards
- Contactors
- Relays
- Safety Switches
- Lighting Fixtures
- Motor Control Centers
- Transformers
- Motor Starters

(D) **Painting:** All painting of exposed raceways, outlets, boxes, fittings, hangers and other equipment which is not factory finished shall be painted as specified elsewhere.

(E) **Conduit and Tubing:** Rigid steel conduit and electrical metallic tubing shall be as follows:

1. Conduit shall be threaded heavy wall hot-dipped galvanized (inside and out) steel conduit.
2. Electrical metallic tubing shall have galvanized exterior and galvanized or equivalent plastic coated interior to protect against corrosion.
3. Rigid aluminum conduit shall be manufactured from 6063-T42 extruded Schedule 40 pipe. The interior surface shall be coated with special approved lubricating liner.
4. Rigid non-metallic conduit for underground ducts shall be manufactured polyvinyl chloride (PVC) 90°C U.L. rated.

(F) **Secondary Conductors:** All conductors shall be copper, manufactured to IPCEA standards.

All branch circuit wiring shall be #12 AWG or larger with flame-resistant insulation. Conductors #8 AWG and larger shall be stranded. Insulation on branch circuit conductors shall be type THHN, unless noted otherwise or otherwise required by the particular application.

Feeds to fluorescent fixtures shall be #12 AWG type THHN. Recessed incandescent fixtures shall be fed with type AF, SF, PF, or PFF conductors unless complete with prewired outlet box approved for type THHN conductors. Surface mounted high intensity discharge (HID) lighting fixtures shall be fed with #12 AWG type THHN unless higher temperature rated conductors are required for the particular fixtures provided. Recessed HID fixtures shall be fed with type SF-2, SFF-2, PF, or PFF unless complete with prewired outlet box approved for type THHN conductors.

Feeders shall be of the size indicated with type XHHW insulation unless noted otherwise.

(G) Outlets: All boxes, fittings and supports shall be galvanized steel.

Boxes for concealed wall outlets shall be 4" square by 1½" deep, or larger, with raised device covers, except that 2¾" deep switchboxes may be used where only one conduit enters a box. Device covers for 4" square boxes in masonry walls which are not plastered or otherwise finished shall be 1" minimum in depth with straight rectangular openings for dry wall type construction. Covers for boxes in sheetrock or wood walls shall be of the same depth as the sheetrock or wood thickness and shall have straight rectangular openings.

Where 4" junction boxes are indicated, they shall be complete with raised device covers as herein before specified. Blank plates shall be as specified for devices.

Boxes for concealed ceiling outlets shall be 4" octagonal by 1½" deep, or larger. Boxes in plaster ceilings shall have plaster covers. Fixture outlet boxes shall be equipped with fixture studs secured to the boxes.

Concrete boxes shall be used for fixtures on concrete ceilings.

Outlet boxes for exposed work inside buildings shall be 4" square x 1½" deep or larger with ½" deep surface metal covers to accommodate the devices indicated. Outlet boxes for work exposed to weather or in damp locations shall be of cast or malleable iron, type FS or FD. Boxes shall have metal covers to accommodate the devices indicated; secure covers with tamper-proof screws.

In walls or ceilings of concrete, tile or other non-combustible material, boxes and fittings shall be so installed that the front edge of the box or fitting will not set back off the finished surface more than ¼". In walls or ceilings constructed of wood or other combustible material, outlet boxes and fittings shall be set flush with the finished surface. If a fixture canopy or pan is used as an outlet box cover, any combustible wall or ceiling finish between the edge of the canopy and the outlet box shall be covered with non-combustible material.

For conduits 1" and smaller, the following shall be the maximum number of conductors permitted in a box:

TRADE SIZE	MAX. NO. #12
1½" x 4" Octagonal	6
1½" x 4" Square	8
1½" x 4 11/16" Square	13
2" x 4 11/16" Square	18
2¾" x 3" x 2"	6
3½" x 3" x 2"	8

Where a fixture stud or wiring device is installed in box; the number shall be reduced by one. A conductor running through the box is counted as one conductor, and each conductor terminating in box is counted as one conductor.

- (H) **Device Plates:** Plates shall be of the one-piece type, #302 satin stainless steel finish and screws. Where weatherproof switches or receptacles are indicated, WP plates shall be used, unless indicated otherwise.

Use multi-gang plates where switches are grouped.

Plates shall be installed with all four edges in continuous contact with finished wall surfaces without the use of mats or similar devices. Plaster fillings will not be permitted. Plates shall be installed with an alignment tolerance of 1/16" from the vertical or horizontal.

Where indicated, the plates shall be furnished with suitable factory engravings.

Device plates shall not be installed until painting is completed. Device plates having paint on their surfaces, or having their finish marred by use or paint remover, shall be replaced at no additional cost to the owner.

- (I) **Manual Starting Switches:** Manual starting switches shall be flush mounted unless indicated otherwise and shall be complete with manual reset bimetallic strip type thermal overload elements, which shall be selected in conformance with motor nameplate ratings. Where indicated, starting switches shall be with integral pilot lights. Plates for flush units shall be stainless steel, and where applicable, ganged with adjacent lighting switches.

- (J) **Safety Switches:** Safety switches shall be of the heavy duty, quick-make, quick-break, visible blade, knife switch type. They shall be of the fused or nonfused type as required. Fused switches shall have positive pressure fuse clips. Switches shall be fully interlocked, with provision to neutralize the interlock by a screwdriver while under load without interrupting the circuit. Switches shall be complete with insulated base, and pressure or solderless lugs. Handles shall be front operated. All switches shall be horsepower rated, capable of breaking stalled-rotor motor current at these ratings. Outdoor locations shall have NEMA type 3R or 4 enclosures; indoor locations shall have NEMA type I enclosures. Switches shall have provision for padlocking in the "on" or "off" positions. All 600 ampere or smaller switches shall be complete with rejection feature to insure rejection of all fuses other than Class R.

Disconnect switches for single phase motors shall be 15A/1P (for 115V motors) or 15A/2P (for 208-240 motors) as required; in outdoor locations these switches shall be mounted in FS condulets with cover and gasket.

- (K) **Fuses (Secondary):** Provide one complete set of fuses, together with 33% spares, unless noted otherwise for all fuseholders. All 600 ampere or smaller cartridge fuses shall be rejection type, Class R, unless noted otherwise.

VIII-3 INSTALLATION AND WORKMANSHIP:

- (A) **Excavating and Backfilling:** Contractor shall do all excavating and backfilling required for the work of this Section. Except as specifically otherwise noted herein, all excavation and backfill shall be in accordance with Section I. Removal of all obstructions, hidden or otherwise, shall be part of this work. Backfilling shall be thoroughly tamped. All surplus earth shall be removed.
- (B) **Record Drawings Showing Changes Made During Construction:** As construction progresses, mark-up two (2) sets of drawings with colored pencils in a neat and understandable manner to show significant changes made during construction. Submit one (1) set of these drawings to Engineer at closeout of project.
- (C) **Work Related To Equipment Not Furnished As Work Of This Division of Specifications:** Unless specifically indicated otherwise, any required electrical services for and required electrical connections to items shown on the plans and/or specified to be furnished in other divisions of specifications or by Owner shall be electrically connected as work of this section.

Raceways, outlets, backboards, cabinets, grounding connections, handholes, underground distribution system, and other roughing-in indicated shall be provided as work of this section for telephone systems, radio systems, other controls, etc.

- (D) Mechanical Equipment:** All power and control wiring associated with Mechanical shall be done as work on this Section.

Overload elements in all starters shall be selected according to actual motor nameplate full load current.

- (E) Methods of Wiring:**

- (1) Conduits:** All wiring run underground or in fill beneath slabs shall be contained in rigid threaded heavy wall hot-dipped galvanized (inside and out) steel conduit encased in concrete envelope of 3" minimum thickness on all sides. However, where specifically indicated on drawings, rigid, non-metallic conduit may be used for underground ducts, as hereinafter specified.

Aluminum conduit may be used in lieu of steel conduit in sizes over 1" provided it is not installed underground or in concrete. Where aluminum conduit is used, elbows, couplings, outlet boxes, fittings, expansion fittings and accessories shall be aluminum.

Electric metallic tubing may be used for the following unless specifically indicated otherwise on drawings or prohibited by the National Electrical Code for a particular area:

- (1)** Branch circuits concealed overhead in furred ceilings and concealed in walls and partitions.
- (2)** Telephone system raceways concealed overhead in furred ceilings and concealed in walls and partitions.
- (3)** Control system raceways concealed overhead in furred ceilings and concealed in walls and partitions.

All raceways shall be exposed unless otherwise indicated.

Branch circuit conduits feeding outlets in masonry walls shall be concealed in the masonry. Where outlet boxes are indicated in bare

masonry walls, the box shall be mounted so that two edges of the box or plaster cover will fall in a mortar joint. Where switchboxes will not accommodate the number of conductors required and 4" square or larger boxes are installed, provide device covers 1" minimum in depth with straight rectangular openings for dry-wall type construction. Where grouting is required to fill up improperly cut openings in the masonry, the work will be rejected. Electrical contractor shall cooperate with the masonry contractor to insure a neat and workmanlike job.

Solderless connectors similar to Scotchlok connectors, Ideal colored wingnuts, or Ideal Crimps with Wrapcaps shall be used for all branch circuit wiring and fixture connections. Solderless connectors of the split-bolt type shall be used for terminals on all conductors #8 and larger.

Connection to all motors not equipped with a portable cord shall be made with a short piece of flexible metal conduit between rigid conduit system and motor terminal box. Ground bond of separate copper conductor included with circuit conductors within raceway shall be made between motor frame and source of power. In all outdoor locations, liquid-tight flexible metal conduit shall be used.

Taps or splices in junction boxes and/or wireways shall be made with gutter taps, complete with covers.

All recessed fluorescent fixtures shall be wired with #12 AWG type THHN conductors in 4 to 6 feet of flexible metal conduit from a box at least one foot (1') from the fixture. All recessed incandescent and HID fixtures shall be wired with type conductors hereinbefore specified in 4 to 6 feet of flexible metal conduit from a box at least one foot (1') from the fixture, unless the fixture is of the prewired type with an integral outlet box approved for the number and type of branch circuit conductors indicated and/or specified. Not more than two (2) individual fixtures shall be connected to any of these outlet boxes. This box shall be located above the ceiling and shall be accessible by removing fixture. Installing blank covers on ceilings to provide access to such boxes will not be acceptable.

Splices in all low voltage wiring (24 volts and below) shall be made at terminal blocks furnished with the equipment. At junction or where other splices are required, these splices shall be soldered.

Typewritten directory of circuits shall be provided for each panelboard.

Branch circuit wiring through lighting fixtures shall be in accordance with current Edition of the National Electrical Code, however, conductor types shall be as specified hereinafter.

Unless a larger size is indicated, conduits shall be sized in accordance with the current Edition of the National Electrical Code for the number and conductor size (AWG) shown or specified.

Approved threaded lubricant containing powdered zinc or lubricating graphite shall be applied to the male threads only of aluminum conduit to prevent joint seizure.

Other routings than those indicated may be used after securing the approval of the Engineer and Contractor shall make allowance for possible obstruction to routes indicated.

All conduit connections to dry type transformers shall have a 12" minimum length of flexible metal conduit in each conduit run and a copper bonding jumper between transformer and rigid conduit on other side of flexible insert. Size of bonding jumper shall be in accordance with the current Edition of the National Electrical Code.

Where underground conduits or ducts cross other utilities, the conduits or ducts shall be installed below other utilities unless top of other utility at the particular location is 12" below bottom of the conduits or ducts. When crossing under other utilities, maintain a minimum of 12" clearance between top of conduit and bottom of other utility. Where underground conduit or ducts are run parallel to other utilities, a minimum clearance of three feet (3') shall be maintained between systems.

- (2) **Wiring in Conduit (Applies Also to E.M.T.):** Where exposed conduit is indicated, the conduit shall be installed parallel with or at right angles to the building walls and ceilings and shall be supported adequately by pipe straps or other approved devices. Unless noted otherwise, where several conduits are run parallel to each other, they shall be grouped together on galvanized strut, with suitable clamps, which shall be attached to the wall or hung from the roof or ceiling construction. Where a single conduit is run exposed in a damp and/or wet location, straps of the type which permit a 1/4" air space between the conduit and the wall shall be used. Fastening of conduit shall be as follows: to wood by means of screws; to masonry by means of

threaded metal inserts, metal expansion screws, or toggle bolts; and to steel by means of machine straps, bolts, or power actuated fasteners. All conduit fasteners shall be approved for the purpose. Tie wire to support and/or fasten conduit will not be acceptable.

Conduit in concrete slabs shall be located so as not to affect the structural strength of the slabs. Conduit in general shall be located in the middle _ thickness of concrete slabs and when installed in slabs poured on grade or fill shall have at least one inch (1") of concrete between conduit and waterproof membrane. The maximum size of conduit that may be run in a slab shall be as directed by the Engineer.

Conduit larger than $\frac{3}{4}$ ", if permitted in reinforced concrete slabs, shall be parallel with or at right angles to the main reinforcement; when at right angles to the reinforcement, the conduit shall be close to one of the supports of the slab.

Conduits which must cross building expansion joints shall, where practicable, cross same in furred ceiling areas rather than in or on slabs or walls, arranged with sufficient flexibility to accommodate the building expansion. However, where such routing is not possible, expansion fittings shall be provided in each raceway in concrete or attached thereto whenever the raceway crosses an expansion joint in the concrete structure. Expansion fitting shall be installed on one side of the joint with its sliding sleeve end flush with the joint and with a length of bonding jumper in the expansion joint equal to at least three times the normal width of the joint. Each expansion fitting shall be zinc-coated steel heavy factory installed packing and internal copper braid packing and shall be complete with UL approved bonding jumper.

Underground runs of multiple conduits shall be provided with plastic spacers to insure 2" minimum of concrete between adjacent conduits.

Unless noted otherwise on drawings, underground runs of conduits shall be installed so that the top of the concrete envelope shall not be less than 24" below grade.

Conduits shall be kept at least 6" from parallel runs of hot water piping, flues, or other hot objects.

Where conduits rise through a concrete floor, the curved portion shall not be visible above the finished floor. Approved conduit sealing fittings and compound shall be used where underground conduits enter building.

Where conduit fittings are installed, these shall be as manufactured by Appleton, or Killark, or Crouse-Hinds.

Connectors and couplings for electric metallic tubing shall be of the compression type. Couplings for rigid heavy wall conduit shall be of the threaded type; two locknuts and one bushing shall be provided where heavy wall conduits enter boxes.

Insulated bushings shall be provided for all conductors #4 and larger.

No wires shall be pulled in until the conduit system is complete. Only approved type wire pulling lubricant shall be used.

During construction all outlet boxes and conduit stub-ups shall be suitably protected against the entrance of foreign material.

All conduit and box fasteners, clips, brackets, bars, clamps and accessories shall be treated to resist corrosion and shall be designed for the particular application.

- (3) **Underground Ducts:** Underground ducts shall be of individual conduits of rigid non-metallic PVC conduits, all encased, unless specifically indicated otherwise, in concrete envelope of 3" minimum thickness at the top, bottom and sides and/or as detailed on drawings. Conduit in underground ducts shall be size as indicated. Duct lines shall slope downward toward handholes and away from buildings with a pitch of not less than 3" per 100 feet. Top of concrete envelope shall be not less than 24" below grade, except that under roads and pavements the minimum shall be 30" below grade. Separators shall be of plastic and shall maintain a minimum of 2" concrete separation between ducts. The joints of the conduit shall be staggered by rows and layers so as to provide a duct line having maximum strength. End bells, flexible couplings, and expansion joints shall be provided as necessary. All exposed vertical runs including risers up poles and through slabs, and elbows shall be rigid heavy wall threaded galvanized conduit; metallic to non-metallic conduit adapters shall be provided as required at a point 10 feet minimum outside perimeter of building slab. All steel conduit so installed shall be effectively grounded. No non-metallic conduit shall be installed under buildings.

- (4) **Mounting Heights: If not otherwise indicated,** mounting heights to centerline of outlets shall be as follows:

Receptacles - 12" above floor.

Switches - 48" above floor.

Panelboards - not more than 5' - 6" from top-most operating handle to floor.

The above mounting heights may be adjusted as required to permit bottom or top of plate to align with mortar joints in unfinished masonry walls, provided joints are not raked. Where joints are raked, adjust height as required to insure that center of outlet box will be in the center of masonry unit. Where outlets at different levels are shown adjacent, they shall, where possible, be installed on a common vertical centerline.

- (5) **Marking of Safety Switches and Panelboards:** Each surface manual starting switch out of sight of the motor which it controls, and each panelboard, and safety switch, regardless of location shall be suitably identified by means of _" high letters cut in white laminated phenolic strip to show black letters. Strip shall be attached to cover by means of two (2) screws. Device plate for each flush manual starting switch and wall switch used as starting switch shall be suitably engraved to identify the equipment controlled.
- (6) **Marking of Receptacles and Fixtures:** Each receptacle and light fixture shall have the circuit number from which it is supplied labeled inside the fixture or receptacle cover plate. Labeling may be hand written in a legible manner with a felt tip permanent ink type marking pen. Use black ink.

VIII-4 MEASUREMENT AND PAYMENT:

No measurement or payment will be made for any of the items of the electrical work unless the bid proposal specifically provides for such direct, separate measurement and payment and all costs incidental thereto shall be included in whatever bid item, whether on a unit basis or by the Lump Sum/Job Basis for which the electrical work is to serve and become a part of.

END OF SECTION

SECTION XV - PRE-ENGINEERED METAL CARPORT COVER

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SECTION XV - PRE-ENGINEERED METAL CARPORT COVER

XV-1 GENERAL:

The work provided for in this section consists of furnishing, erecting, trimming and finishing a pre-fabricated, pre-engineered metal carport cover of the size and configuration as noted on the plans.

The carport cover shall be complete with all accessories and finishes as shown on the plans and as specified herein.

The carport cover shall be a standard, commercial grade, pre-fabricated frame unit as manufactured by Star Buildings and Carports, or a company who has been fabricating this type of carport cover for a minimum of five (5) years.

XV-2 SHOP DRAWINGS:

The Contractor shall prepare and submit to the Engineer for approval, shop drawings showing complete information necessary for the fabrication and erection of all items to be furnished. Drawings shall clearly show shop and field welded connections, including location, size and extent of welding. Provide details and templates for setting all anchor bolts to be set in concrete for the attachment of steel items thereto.

Oversights and inaccuracies in shop drawings are the responsibility of the Contractor, notwithstanding approval of said shop drawings.

Contractor shall submit a minimum of five (5) complete sets of Shop Drawings for Engineer's approval, prior to fabrication. Approved shop drawings will be returned to General Contractor for his use and for the fabricator or manufacturer, except for two (2) sets to be retained by the Engineer, one for his files and one for the project inspector.

XV-3 MATERIALS:

Material components of the building shall be as follows:

- A. Frame shall be designed for dead loads and snow loads for 35 psf.
- B. Frame shall be designed for wind loads resulting from a 140 mph, 3 second gust wind speed.
- C. No additional weight shall be added to or suspended from the frame, other than what is supplied by the manufacturer.
- D. Frames shall be spaced no more than 5'-0" O.C.
- E. Steel weld strength = 55 ksi minimum.
- F. Use ½" diameter expansion anchors, spaced at 24" O.C.
- G. All fasteners shall be 12-14 x ¼ HWU Ultra-2 TCP3 CS.
- H. Each location where the frame is joined together shall have two (2) screws on each side of the joint.

- I. All framing shall be 14 ga. 2"x2" or 2"x3" galvanized tubing
- J. All framing members shall be connected with 12 ga. Bends.
- K. Building roof peak height shall be a minimum of (See Plans). Roof panels shall be installed vertically.
- L. Building eave height shall be a minimum of (See Plans).
- M. All roofing and wall material shall be 26 ga. Pre-Painted with UV coating. Owner shall select color during submittal phase.
- N. Wall panels shall be installed vertically and shall terminate 8'-0" above finished slab grade.
- O. The bottom edges of wall panels shall include J-Trim on both sides.
- P. Building shall come with a 20 year warranty.

XV-4 INSTALLATION:

Erection procedure shall be as outlined and recommended by the metal carport cover manufacturer and shall be followed as closely as possible and together with accepted trade practices shall conform to details and instructions as shown on the erection drawings as provided by the metal carport cover manufacturer.

XV-5 FLASHING AND TRIM:

The Contractor shall furnish necessary flashing and/or trim at all normal locations on the building, including but not limited to, the rake, corners, eaves, at frame openings, and wherever necessary to provide for weather tightness and a good finished appearance.

A formed panel matching the slope and profile of the adjoining roof panels shall be provided along the building ridge. This panel shall be sealed with a rubber type seal between the panel and the adjacent roof panels.

Closures matching the profile of the panel shall be installed along the eave of the roof panels and the rake of the endwall panels and at other locations where required for water tightness.

Color of the flashing and trim shall be by the Owner.

XV-6 MEASUREMENT AND PAYMENT:

No direct measurement or payment will be made for the Pre-Engineering Metal Carport Cover unless an item is specifically included in the Bid Proposal Form for said building and all cost incidental to the building will be included in the Lump Sum Price paid for whatever item or project that the metal carport cover is to become a part of it.

END OF SECTION