CITY OF BILOXI
SPECIFICATIONS
FOR

PROJECT NAME
CITY PROJECT NO. NUMBER

Prepared for:
City of Biloxi
Engineering Department

December, 2021

CITY OF BILOXI SPECIFICATIONS
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Revised: 08/23/2019

CITY OF BILOXI
STANDARD
BIDDER'S CHECKLIST

THE CHECKLIST IS NOT TO BE CONSIDERED PART OF THE SPECIFICATIONS OR CONTRACT DOCUMENTS. THE CHECKLIST IS TO BE USED AS AN AID TO THE CONTRACTOR IN PREPARING THEIR PROPOSAL.

Bidders should check that the following are completed before submission of bid:

(1) Complete SECTION 905-A – PROPOSAL FORM.
   a. Have all addenda been acknowledged and added to SECTION 905-A – PROPOSAL FORM?
   b. Have all unit prices and total extensions (item totals) been entered in SECTION 905-A – PROPOSAL FORM?
   c. Has the total sum of bid been entered on the last page of SECTION 905-A – PROPOSAL FORM?

(2) Complete SECTION 905-B – NON-COLLUSION, DEBARMENT/INELIGIBLE CERTIFICATION.

(3) Complete SECTION 905-B – NON-COLLUSION, DEBARMENT/INELIGIBLE CERTIFICATION (duplicate copy).

(4) Complete SECTION 905-E – CERTIFIED EMPLOYMENT PLAN FORM FOR CERTAIN PUBLIC WORKS PROJECTS in accordance with Miss. Code Ann. §31-5-37 (Mississippi Jobs First Bill), if required.

(5) Has certified check, cashier's check, or bid bond payable to the City of Biloxi been included? Specification Subsection 102.08

(6) Has Non-resident Contractor's copy of current laws from State domiciled been included? Specification Subsection 103.03

(7) Have unit prices and item totals been entered in accordance with Subsection 102.06 and as modified by special provision?

(8) Envelope containing bid is marked plainly with the following as described in SECTION 901-ADVERTISEMENT:
   a. Name of the project and the project number
   b. Certificate of Responsibility classification if bid is over $50,000, or statement that bid is less than $50,000. (Not required for federally funded projects)
   c. Company Name and Address, and all applicable state and local license numbers.

(9) For MDOT funded projects:
Bidders SHALL return the specification package in its entirety. DO NOT remove any part of the Contract Documents. An incomplete bid package is considered as an irregular bid, and MDOT regulations do not allow "stripped" bids to be opened.

For all other projects other than MDOT funded projects:
Bidders <u>are not required</u> to return the entire specification package, but shall return all of the applicable documents required in the specifications (See Items No. 1– 8 above).

FAILURE TO COMPLETE ALL OF THE APPLICABLE REQUIREMENTS <u>MAY</u> BE CAUSE FOR THE PROPOSAL TO BE CONSIDERED IRREGULAR.

Revised: 10/16/19

CITY OF BILOXI
TESTING AND SUBMITTAL
REQUIREMENTS

TESTING AND SUBMITTAL REQUIREMENTS – The CONTRACTOR shall perform all material acceptance sampling and testing for this project. All costs associated with material sampling and testing, material sample submittals and shop drawing submittals are considered incidental and are to be absorbed in the overall contract price.

The OWNER or his authorized representative reserves the right to request additional testing or submittals, which may or may not be listed below and it will be the responsibility of the CONTRACTOR to provide such testing and/or submittal data.

Material sampling and testing shall be performed in accordance with the 2017 Edition of the *Mississippi Standard Specifications for Road and Bridge Construction* and the associated projects special provisions and by Mississippi Department of Transportation approved testing laboratories. Material sampling and field testing shall be observed by the Owner or his authorized representative.

Test results shall be recorded in a format suitable for formal project documentation.

Any required material samples and/or test results shall be forwarded to the Owner or his authorized representative for approval prior to beginning construction of elements of the work where the materials will be incorporated. U. S. - made materials are required.

The following testing and submittal documents are required for each project.

TESTING

The name of the testing laboratory to be used by the Contractor shall be submitted to the OWNER at the Preconstruction Conference.

All testing results shall be submitted to the City Engineer or his authorized representative. Approval will not be granted for a material until all test results for the material are received from the Contractor and reviewed and approved by the City Engineer or his authorized representative.

SUBMITTAL AND SHOP DRAWINGS

General - Five (5) copies of shop drawings (in collated sets) shall be delivered to the City Engineer or his authorized representative for review and approval. Approval for use of a particular item will not be granted for the item until all submittals and/or shop drawings have been received, reviewed and approved by the Design Engineer, and by the City Engineer or his authorized representative.

Asphalt - Mix Design

Concrete - Mix Design, Curing Compound, Expansion Material

Steel	-	Reinforcing Steel, Miscellaneous Steel, Tie Wire, Reinforcing Steel Chairs
Drainage	-	Pipe, Rubber Gaskets, Castings, Gratings, Epoxy Coatings, Steps, Filtration Fabric, Precast Boxes, Riser Rings, Non-shrink Grout
Sewer	-	Pipe, Fittings, Mechanical Joints, Couplings, Adapters, Gaskets, Non-shrink Grout, Precast Manholes, Castings, Epoxy Coatings, Steps, Riser Rings, Filtration Fabric
Pump Stations	-	Pumps, Valves, Fittings, Piping, Hatches, Control Panel(s), SCADA System(s), Backup Electric Generators, etc.
Water	-	Pipe, Fittings, Mechanical Joints, Couplings, Adapters, Fire Hydrants, Grease, Valves, Valve Boxes, Adjustment Risers, Corporation Stops, Curb Stops, Service Tubing, Water Meters, Meter Boxes, Reducers, Plastic Inserts, Bolts, Nuts, Retainer Glands, Filtration Fabric, "Not in Service" Bags and ties, etc.
Utility	-	Water and Sewer Curb Stamping Tools, Locator Wire, Marking Tape, Splicing Kits, etc.
Fencing	-	Fence Posts, Post Caps, Fencing Fabric, Horizontal Members, Fence Boards, Gates, Concrete, Hardware, Attaching Mechanisms, etc.
Misc.	-	Traffic Control Plan, Jack and Bore or Directional Bore Plans, Miscellaneous Metal or Wood forming or shoring and any other item(s) necessary for the execution of work.

LOCATE EXISTING UNDERGROUND UTILITIES - The Mississippi One Call Center **Confirmation Number** shall be submitted prior to the commencement of any work on the project.

PROGRESS SCHEDULE – The Progress Schedule shall be delivered to the OWNER or his authorized representative three (3) working days **prior** to the Notice to Proceed. Any revisions to the progress schedule shall be submitted to the OWNER or his authorized representative for approval. See Section 907-108 for further information regarding the progress schedule.

PAY REQUEST SUBMITTALS – Periodically the CONTRACTOR shall submit a request for payment for portions of the work that have been completed and approved by the City Engineer or his authorized representative. The pay request shall include:

a. A list of all pay items (including any items added by approved change orders).
b. The contract unit price bid for each item.
c. The total units completed to date, the total units previously paid, and the total units for the current pay period.
d. The total extension (unit price times quantity) for each pay item completed to date and current pay period.
e. The cover sheet shall contain the project name, number, contractor's name, name of the responsible person, dates for which the pay request covers, and total dollar amounts (sum of all pay items) for: total to date, previously paid, and total current. The percent complete shall be provided in terms of elapsed time and also in terms of cumulative dollars requested to date for pay item work vs. the total project cost, exclusive of mobilization.
f. Three (3) fully executed original copies of the Application and Certificate for Payment and Continuation Sheet forms.
g. One (1) original copy of the Contractor's Affidavit of Payment of Debts and Claims.
h. One (1) original copy of the Contractor's Affidavit of Release of Liens.
i. One (1) original copy of the Contractor's Partial Release of Liens.
j. One (1) original copy of the Consent of Surety to Final Payment (as applicable for Final Payment).
k. One (1) original current insurance certificate.
l. One (1) original copy of letter indicating whether or not a time extension is being requested.
m. One (1) copy of the Stormwater Erosion & Sediment Control Inspection Form(s) for the pay request period.

Copies of the forms required in items f, g, h, i and j as noted above are included at the end of this section along with an Application and Payment Checklist.

An updated progress schedule and a set of "red-lined" drawings (if required) shall be delivered to the OWNER with each pay request. The "red-lined" drawings shall show any field changes including changes to the approved stormwater pollution prevention plan (SWPPP) that have occurred up to that point. If no field changes have occurred, red-lined drawings may be omitted from the estimate documentation, but a declaration statement noting that no field changes occurring during this pay period shall accompany the estimate. Failure to submit an up to date progress schedule and "red-lined" drawings (if required) will delay processing of pay estimates in a timely manner.

FINAL RECORD DRAWINGS - Record Drawings (digital and hard copy) shall be delivered to the OWNER or his authorized representative within four weeks from the date of the final inspection and prior to the release of the final payment as noted in Section 105.

PROJECT VIDEO RECORD - Pre-construction and post-construction videos shall be provided by the Contractor. The Contractor shall furnish all labor, materials and equipment necessary to perform a color audio-video recording of the entire length of the project and all properties immediately adjacent to all work areas. This work shall be performed prior to any construction or mobilization and at the end of the project after final restoration has been completed. The Contractor shall deliver two (2) copies each of the

completed pre-construction and post-construction DVD video(s) to the OWNER or his authorized representative. The pre-construction video shall be provided prior to the start of any construction and after all utilities have been located and marked. The post-construction video shall be provided after final restoration and is required prior to final payment. All labor and materials necessary to make the video shall be at the Contractor's expense.

The Owner or his authorized representative reserves the right to reject the audio-video DVD because of poor quality, unintelligible audio or uncontrolled pan or zoom. In the event the DVD does not provide adequate coverage of the project/work area or does not comply with these specifications, the Contractor will be required to resurvey the area and resubmit a new DVD. Any video rejected by the Owner shall be re-videoed at no additional cost to the Owner.

Prior to the start of construction or mobilization of equipment or materials, the Contractor shall perform an audio-video survey of the project area which will be excavated or which has the potential to be disturbed by the Contractor's operations. The post-construction audio-video survey shall cover the same area as the pre-construction video and include any additional areas that were disturbed during construction.

The video recording shall be performed by a qualified audio-video taping firm or individual knowledgeable in construction practices and established inspection procedures.

The Contractor shall be responsible for the timely execution, delivery and quality of the pre-construction and post-construction videos.

The Contractor shall provide two (2) copies of each DVD. The DVD and jewel case cover shall be labeled as follows:

Face of DVD & Case Cover

PRE-CONSTRUCTION VIDEO or POST-CONSTRUCTION VIDEO

Project Name:_____
City of Biloxi (COB) No.:_____
Contractor:_____
DVD No.:_____
Date Recorded:_____
Date Submitted:_____

A cumulative index that correlates the various segments of video coverage to the corresponding DVD shall be provided to the Owner or his authorized representative. The index shall identify each segment in the video by location, station, video counter number, viewing side, starting point, direction of travel and end point. Written documentation shall coincide with the information on the video to allow for easy retrieval at a later date.

The video portion of the recording shall produce bright, sharp, clear pictures with accurate colors and shall be free from distortion. The audio portion of the recording shall provide precise explanatory

notes with proper volume and clarity and shall be free from distortion.

To eliminate the possibility of tampering or editing, the DVD shall display continuous digital information which includes the following:

1) Date and time of the recording; date information shall contain the month, day and year; time information shall contain hours, minutes and seconds, separated by colons.

Digital information shall appear at the bottom of the viewing screen and in no way interfere with the video portion of the recording.

At the start of each video recording segment, an identification summary shall be read into the record. The identification summary shall include the following:

1) DVD Number
2) Contract Name
3) Contractor's Name
4) Date and Time
5) Weather
6) Manhole numbers (if applicable)
7) General location and name of street
8) Direction of travel and viewing direction

The recording shall include coverage of all surface and site features located in areas that will be impacted by the Work. The surface features shall include but are not limited to, roadways, driveways, sidewalks, pavers, curbs, culverts, headwalls, retaining walls, buildings, utilities, lawns, landscaping, trees, shrubbery, fences, mailboxes and signs. The area of coverage shall extend a minimum of 25 feet beyond the proposed work area (right-of-way, easement, street, etc.) and shall include all unpaved areas and any access routes where vehicles or equipment will pass.

Video recording may be required outside of the project area/limits in order to properly establish and identify those features deemed necessary by the Owner or his authorized representative.

The video recording coverage shall document the existing condition of the surface and other features located within the area and shall be supported by an appropriate audio description. The audio description shall be made simultaneous with the video coverage.

Houses and buildings shall be identified visually and verbally by house number in such a manner that structures of the proposed system (i.e. manholes on a sewer system, etc.) can be located by reference.

If required, the Owner or his authorized representative shall be present during the pre and post-construction video survey. The Contractor shall coordinate with the Owner or his authorized representative prior to performing this work. All video recording shall be performed during regular business hours, unless otherwise approved by the Owner or his authorized representative. No video recording shall be performed if the weather is not acceptable, such as during periods of rain or fog.

STORM DRAIN/SANITARY SEWER LINE VIDEO – Once "lamping" and mandrel testing is complete all storm drain and sanitary sewer lines and services 42" and smaller (65" x 40" and smaller for arch storm drain) shall be videoed in accordance with the following.

a. Upon completion of "lamping" and mandrel test, the Contractor shall video all new sewer mains and sewer services on the project after a minimum of thirty (30) calendar days from installation.
b. Upon completion of "lamping", the Contractor shall video all new round storm drain lines 42" and smaller and all new arch storm drain lines 65" x 40" and smaller installed on the project after a minimum of thirty (30) calendar days from installation.
c. The lines to be videoed shall be clean of all mud, silt, sand, and water so that the entire pipe (top to bottom) is visible.
d. The Contractor shall be responsible for plugging active lines, the proper disposal of waste from the lines to be videoed and any bypass pumping required to satisfactorily complete the storm drain and sanitary sewer line video(s). The Contractor shall identify and provide an approved waste disposal site in accordance with all federal, state and local agency requirements. The City of Biloxi can no longer accept this waste for disposal. Proper documentation, including a manifest detailing the disposal of waste removed from the lines shall be provided to the Owner along with copies of the videos. The video shall be color and videoed with a panoramic lens. The pipe segment being videoed, along with a length counter shall be imprinted on the video footage so that the information is on the video footage while viewing. Imprinted information shall be legible, but shall not interfere with the inspection footage.
e. The video camera shall stop at each joint and pan around the joint 360° so that the entire joint is visible.
f. The video camera shall stop at any suspected insufficient areas as directed by the City Engineer or his authorized representative.
g. The contractor shall notify the City Engineer or his authorized representative 24 hours in advance of video operations. The Contractor shall make arrangements for the City Engineer or his authorized representative to be present to witness the making of the video.
h. The Contractor shall give a copy of the video (in DVD format) to the City Engineer or his authorized representative for review and approval of the new storm drain/sanitary sewer lines prior to the installation of the road subbase.
i. In the event that any imperfection(s) in any of the new storm drain or sanitary sewer lines is discovered during the review of the video, the Contractor shall correct the problem(s) immediately at his own expense. Once the Contractor believes the problem(s) have been corrected, the entire section(s) of pipe (i.e. manhole to manhole or drainage structure to drainage structure) containing the imperfection(s) shall be retesting following all the same requirements as imposed for the original testing. This procedure shall be repeated until the pipe segment(s) is approved for acceptance by the City Engineer or his authorized representative.
j. Making video(s) of storm drain and sanitary sewer lines and all associated work required to complete the video(s) shall not be measured for separate payment. The cost thereof shall be absorbed in the bid price per linear foot of new storm drain or sanitary sewer line.

ENGINEERING DEPARTMENT
Christy LeBatard, P.E., City Engineer

Post Office Box 429
Biloxi, Mississippi 39533
Phone: (228) 435-6271
(228) 435-6269
Fax: (228) 435-6179

Application for Payment Checklist

The following documents shall be submitted as noted. Initial & Date

Application for Payment (1 Fully Executed Originals)	
Continuation Sheet (1 Fully Executed Originals)	
Contractors Affidavit of Payment of Debts and Claims (1 Original)	
Contractors Affidavit of Release of Liens (1 Original)	
Contractors Partial Release of Lien (1 Original)	
Copy of Current Insurance Certificate (1 Copy)	
Letter stating whether or not you are requesting a time extension (1Original)	
Stormwater Erosion & Sediment Control Inspection Form (1 Copy)	
Redline drawings of field changes or letter stating there are none	

APPLICATION AND CERTIFICATE FOR PAYMENT

TO (OWNER):
City of Biloxi
P.O. Box429
Biloxi, MS 39532

PROJECT NAME:

FROM (CONTRACTOR):

APPLICATION NUMBER:
PERIOD TO: 0/00/2010
CONTRACT DATE: 0/00/2010
NOTICE TO PROCEED: 0/00/2010
EXPECTED COMPLETION: 0/00/2010
PERCENT COMPLETE: 0% COST
0% TIME

Distribution to:
OWNER ☐
CONSTRUCTION MANAGER ☐
ARCHITECT ☐
CONTRACTOR ☐
FIELD ☐

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for Payment, as shown below, in connection with the Contract. Continuation Sheet is attached.

CHANGE ORDER SUMMARY			
Number	Date Approved		
	TOTALS	$0	$0
Net change by Change Orders			

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: _____

By: _____ Date:

State of: MISSISSIPPI County of: HARRISON

Subscribed and sworn to before me this _____ day of _____ , 2012

Notary Public: _____

My Commission expires: _____

1. ORIGINAL CONTRACT SUM $0.00

2. Net Change by Change Orders $0.00

3. CONTRACT SUM TO DATE $0.00

4. TOTAL COMPLETED AND STORED TO DATE ..... $ -
(Column G on Continuation Sheet)

5. RETAINAGE:

a. 5 % of Completed Work $ -
(Col. D+E on continuation sheet)

b. 5 % of Stored Material $ -
(Col. F on continuation sheet)

Total retainage (Line 5a+5b or total in column I of continuation sheet.)..... $ -

6. TOTAL EARNED LESS RETAINAGE ..... $ -
(Line 4 less Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT..... $0.00
(Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE $0.00

9. BALANCE TO FINISH, PLUS RETAINAGE $0.00
(Line 3 less Line 6)

ENGINEER'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Program Manager and Engineer certify to the owner that to the best of their knowledge, information and belief the Work has progressed as indicated, the quality of Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED..... $_____

(Attach explanation if amount certified differs from the amount applied for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

Excel file document available upon request from the City of Biloxi after award of project.

CONTINUATION SHEET

APPLICATION AND CERTIFICATE FOR PAYMENT,
Contractors signed Certification is attached

Project Name:
Project Number:

APPLICATION NUMBER: 1
APPLICATION DATE: 00/00/00
PERIOD TO: 00/00/00

A	B1	B2	B3	B4	C	D1	D2	D3	E1	E2	E3	F	G			H	I
ITEM NO.	DESCRIPTION OF WORK	QTY	UNIT	UNIT PRICE	SCHEDULED VALUE (B2 * B4)	TOTAL WORK IN UNITS COMPLETED PREVIOUS	TOTAL WORK IN UNITS COMPLETED THIS PERIOD	TOTAL WORK IN UNITS COMPLETED TO DATE **(D1+D2)**	TOTAL WORK VALUE COMPLETED PREVIOUS	TOTAL WORK VALUE COMPLETED THIS PERIOD	TOTAL WORK VALUE COMPLETED TO DATE **(E1+E2)**	MATERIALS PRESENTLY STORED (NOT IN E1 OR E2)	TOTAL COMPLETED AND STORED TO DATE (E3+F)	% (G/C)	BALANCE TO FINISH - UNITS	BALANCE TO FINISH - VALUE	RETAINAGE
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Contractor's Partial Release of Liens

PROJECT NAME & NUMBER: Pay Estimate No. _____

TO OWNER:
City of Biloxi
P.O. Box 429
Biloxi, MS 39533

FROM CONTRACTOR:

Upon receipt and in consideration of the payment of $_____. Contractor warrants that all subcontractors, suppliers of materials, equipment, and labor have been or will be properly paid and that no may be placed on the owners property by the contractor, subcontractors, vendors, or suppliers for any material or equipment invoices for which payment has been made.

Executed this_____day of_____, _____

_____
(Signature of Contractor)

_____
(Printed name and title)

STATE OF:
COUNTY OF:

The above named,_____, appeared before me this the_____day of _____,_____and executed the foregoing document as by our act and deed.

Notary Public:_____

My Commission Expires: _____

Contractor's Affidavit of Payment of Debts and Claims

PROJECT NAME & NUMBER Pay Estimate No. _____

TO OWNER: VIA (ENGINEER) FROM CONTRACTOR:
City of Biloxi
P.O. Box 429
Biloxi, MS 39533

The undersigned hereby certified that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the contract referenced above for which the Owner, or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:
List exceptions on an attached sheet.

SUPPORTING DOCUMENTS ATTACHED HERETO:
1. Consent of Surety to Final Payment
2. Contractor's Release of Waiver of Liens, conditional upon receipt of final payment
3. Separate Releases or Waivers of Liens from Subcontractors, and material and equipment suppliers to the extent required by the Owner, accompanied by the list thereof
4. Contractor's Affidavit of Release of Liens

Executed this _____ day of _____, _____

_____ _____
(Signature of Contractor) (Printed name and title)

STATE OF: _____

COUNTY OF: _____

The above named, _____ appeared before me on this the _____ day of _____, _____ and executed the foregoing document as by our act and deed.

Notary Public: _____

My Commission Expires: _____

Contractor's Affidavit of Release of Liens

PROJECT NAME & NUMBER: Pay Estimate No. _____

TO OWNER:
City of Biloxi
P.O. Box 429
Biloxi, MS 39533

FROM CONTRACTOR:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:
List exceptions on an attached sheet.

SUPPORTING DOCUMENTS ATTACHED HERETO:
1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors, and material and equipment suppliers to the extent required by the Owner, accompanied by a list thereof.

Executed this_____day of_____, _____

_____ (Signature of Contractor)

_____ (Printed name and title)

STATE OF:
COUNTY OF:

The above named,_____, appeared before me this the_____day of _____,_____and executed the foregoing document as by our act and deed.

Notary Public:_____

My Commission Expires: _____

Consent of Surety to Final Payment

PROJECT NAME & NUMBER

TO OWNER: VIA (ENGINEER) FROM CONTRACTOR:

City of Biloxi
P.O. Box 429
Biloxi, MS 39533

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(*insert name and address of Surety)*

, SURETY

on bond of
(*insert name and address of Contractor)*

, CONTRACTOR

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to

City of Biloxi
P.O. Box 429
Biloxi, MS 39533

As set for in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its bond on this date:
(*insert in writing the month followed by the numeric date and year)*

_____
Surety Name

_____
Signature of Authorized Representative

_____
Printed Name and Title

Attest:

(*Seal*)

Revised: 02/18/2019

SECTION 901
ADVERTISEMENT FOR BIDS

Notice is hereby given that the City of Biloxi, Mississippi, will receive sealed bids at the Mayor's Office, City Hall, second floor, until ____ p.m. on (DAY), the (DATE) of (MONTH) **,** (YEAR) , for the following:

(PROJECT TITLE)
CDBG PROJECT NUMBER: (NUMBER)

Work on which proposals are invited consists of furnishing and installing (description of work in general with project location).

The maximum time allowable for completion of said project is (DAYS WRITTEN OUT) (DAYS AS A NUMBER) calendar days following the CITY'S written order to commence (Notice to Proceed).

A PRE-BID MEETING will be held at (TIME) on (DAY), (DATE) at (LOCATION). It is strongly recommended that all prospective Bidders attend. It is also suggested that all potential subcontractors and interested parties attend.

The successful bidder will be required to furnish a 100% Payment and Performance Bond if the bid equals or exceeds $25,000. If the bid is less than $25,000, the City of Biloxi may elect to make a lump sum payment at the completion of the job, in which case a payment and performance bond shall not be required.

Proposals must be accompanied by a Proposal Guaranty consisting of a Bid Bond, Cashier's Check or Certified Check in the amount of 5% of the amount of the bid. Such security to be forfeited as liquidated damages, not penalty, by any bidder who fails to carry out the terms of the accepted Bid and/or execute the Contract and Post Performance and Payment Bond as required within the time specified.

All persons having a contract with the City of Biloxi must adhere to the City's policy concerning non-discrimination without regard to race, creed, color, age, sex, national origin, or handicap.

On bids which equal or exceed $50,000, Certificate of Responsibility number issued by the Mississippi State Board of Contractors shall be written on the outside of the envelope containing the bids. Bids of less than $50,000 will be marked on the outside that the bid contained within does not exceed $50,000.

Bids, which are for work outside of the classification listed for any bidder, shall be returned unopened.

When bids are submitted electronically, the requirement for including a certificate of responsibility, or a statement that the bid enclosed does not exceed Fifty Thousand Dollars ($50,000.00), on the exterior of the bid envelope shall be deemed in compliance by including the same information as an attachment with the electronic bid submittal.

Preference shall be given to resident contractors, and a nonresident bidder domiciled in a state, city, county, parish, province, nation or political subdivision having laws granting preference to local contractors shall be awarded Mississippi public contracts only on the same basis as the nonresident bidder's state, city, county,

parish, province, nation or political subdivision awards contracts to Mississippi contractors bidding under similar circumstances. In order to ensure that Mississippi's so-called Golden Rule is followed, state law requires a non-resident bidder to attach to his bid a copy of his resident state's current law pertaining to such state's treatment of non-resident contractors. Resident contractors actually domiciled in Mississippi, be they corporate, individuals or partnerships, are to be granted preference over nonresidents in awarding of contracts in the same manner and to the same extent as provided by the laws of the state, city, county, parish, province, nation, or political subdivision of domicile of the nonresident.

Contractors have the option of submitting their bids sealed in an envelope or through the City's electronic bid submission link at www.biloxiplans.com.

The ability to obtain any insurance required by the contract documents must be demonstrated in the bid by the means specified in the contract documents. Proof of actual insurance coverage must be submitted within five (5) business days from the bid acceptance.

In compliance with the laws of the State of Mississippi, in choosing materials for the project, the successful bidder shall be required to give preference to materials grown, produced, prepared, made or manufactured within the State of Mississippi. The foregoing notwithstanding, no preference shall be given to materials grown, produced, prepared, made or manufactured in the State of Mississippi when other materials of like quality produced outside the State of Mississippi may be purchased or secured at less cost, or any other materials of better quality produced outside the State of Mississippi can be secured at a reasonable cost. The Contractor shall not use any materials on the project that are grown, produced, prepared, made or manufactured outside of the United States. If such materials are not available, then those which are grown, produced, prepared, made or manufactured outside the United States may be used.

This project is funded in whole or part from funds provided by the Mississippi Development Authority and as such all bidders are required to comply with MCA Section 31-5-37, as amended, (adopted on April 1, 2013) and all applicable regulations of the MDES. All bidders will be required to provide a certification with their bid that they will comply with the provisions of this law if they are awarded this contract. If the bidder fails to include this certification in its bid package, the bid will be rejected as required by law. Any bidder will also be required to file an employment plan, proof of registration with MDES, comply with certain hiring practices and otherwise comply with these laws and regulations in the time and manner required by law.

Minority and women's business enterprises are solicited to bid on this contract as prime contractors and are encouraged to make inquiries regarding potential subcontracting opportunities and equipment, material and/or supply needs. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development (HUD) Act of 1968, as amended, 12 U.S.C. 1701 u (Section 3).

Section 3 of the Housing and Urban Community Development Act 1968, as amended (12 U.S.C. 1701u) requires that the County and its contractors participating in HUD Federally funded projects provide opportunities for job training and employment, to the greatest extent feasible, to low income residents of the Section 3 project area and preference be given to qualified Section 3 Business concerns for work in connection with projects funded in whole or in part with U.S. Department of Housing and Urban Development funds, provided the Section 3 Business meets all of the criteria set forth in the Code of Federal Regulations Part 135 and all subparts thereof. The designated Section 3 area for this project is the limits of Harrison County, Mississippi.

A Section 3 resident is defined as: (1) A public housing resident; or (2) An individual who resides in the metropolitan area or non-metropolitan county in which the Section 3 covered assistance is expended, and who is a low or very low-income person, as this term is defined in section 3(b)(2) of the 1937 Act (42 U.S.C. 1437a(b)(2).

A Section 3 business concern is defined as:

1. That is 51 percent or more owned by Section 3 residents within the geographical area of Harrison County; or
2. Whose permanent, full-time employees include persons, at least 30 percent of whom are currently Section 3 residents, or within three years of the date of first employment with the business concern were Section 3 residents, or
3. That provides evidence of a commitment to by contract in excess of 25 percent of the dollar award of all subcontracts to be awarded to business concerns that meet the qualifications set forth in paragraph (1) or (2) in this definition of "Section 3 business concern"

BIDS SHALL BE DELIVERED TO THE MAYOR'S OFFICE, SECOND FLOOR, CITY HALL BUILDING, 140 LAMEUSE STREET, BILOXI, MISSISSIPPI, 39530, OR ELECTRONICALLY SUBMITTED AT WWW.BILOXIPLANS.COM.

Bids shall be in letter form with the envelope or electronic attachment and bid marked plainly **(PROJECT TITLE AND CDBG NUMBER)**, and shall be addressed to the Mayor's Office, P.O. Box 429, Biloxi, Mississippi 39533. In addition, the envelope or electronic attachment shall list the Company Name and Address, and all applicable state and local license numbers.

The City reserves the right to reject any and all bids and to waive any informality in the proposal accepted. No bidder may withdraw his bid within 60 days after the actual date of the opening thereof.

Published by order of the Municipal Clerk, this the (DATE) of (MONTH), (YEAR).

SEAL

_____
MUNICIPAL CLERK

SEND PROOF OF PUBLICATION:

Publish Twice: MONTH, DAY, YEAR & MONTH, DAY, YEAR

SECTION 901
ADVERTISEMENT FOR BIDS

Notice is hereby given that the City of Biloxi, Mississippi, will receive sealed bids at the Mayor's Office, City Hall, second floor, until 4:00 p.m. on Wednesday, the _____ day of _____, 2022, for the following:

Project No. 0000: _____

Work on which proposals are invited consists _____.

A PRE-BID MEETING will be held at 10:00 a.m. on January 1, 2022 at City of Biloxi Engineering Office library located at 214 A Delauney St, Biloxi, Mississippi (the Public Works Building). It is strongly recommended that all prospective Bidders attend. It is also suggested that all potential subcontractors and interested parties attend.

The maximum time allowable for completion of said project is two hundred fifty (250) calendar days following the City's written order to commence (Notice to Proceed).

The successful bidder will be required to furnish a 100% Payment and Performance Bond if the bid equals or exceeds $25,000. If the bid is less than $25,000, the City of Biloxi may elect to make a lump sum payment at the completion of the job, in which case a payment and performance bond shall not be required.

Proposals must be accompanied by a Proposal Guaranty consisting of a Bid Bond, Cashier's Check or Certified Check in the amount of 5% of the amount of the bid. Such security to be forfeited as liquidated damages, not penalty, by any bidder who fails to carry out the terms of the accepted Bid and/or execute the Contract and Post Performance and Payment Bond as required within the time specified.

All persons having a contract with the City of Biloxi must adhere to the City's policy concerning non-discrimination without regard to race, creed, color, age, sex, national origin, or handicap.

On bids which equal or exceed $50,000, Certificate of Responsibility number issued by the Mississippi State Board of Contractors shall be written on the outside of the envelope containing the bids. Bids of less than $50,000 will be marked on the outside that the bid contained within does not exceed $50,000. When bids are submitted electronically, the requirement for including a certificate of responsibility, or a statement that the bid enclosed does not exceed Fifty Thousand Dollars ($50,000.00), on the exterior of the bid envelope shall be deemed in compliance by including the same information as an attachment with the electronic bid submittal.

Bids, which are for work outside of the classification listed for any bidder, shall be returned unopened.

Plan holders are required to register for an account and log-in at www.biloxiplans.com; at this site plans can be viewed for no charge or physically purchased. All plan holders are required to have a valid email address for registration. Purchased bid documents are non- refundable and must be purchased through the website. Questions regarding website registration and online orders please contact web support at (662) 407-0193. A view only copy of the plans, specifications, and proposal documents are also available to be viewed at the City of Biloxi Engineering Department, which is located at 214 A Delauney Street, Biloxi, Mississippi (the Public Works Building), (228) 435-6269. Plans and specifications may be examined without charge online or at the

City of Biloxi Engineering Department during regular business hours (7:00 a.m. - 4:00 p.m., Monday - Friday).

Contractors have the option of submitting their bids sealed in an envelope or through the City's electronic bid submission link at www.biloxiplans.com.

Preference shall be given to resident contractors, and a nonresident bidder domiciled in a state, city, county, parish, province, nation or political subdivision having laws granting preference to local contractors shall be awarded Mississippi public contracts only on the same basis as the nonresident bidder's state, city, county, parish, province, nation or political subdivision awards contracts to Mississippi contractors bidding under similar circumstances. In order to ensure that Mississippi's so-called Golden Rule is followed, state law requires a non-resident bidder to attach to his bid a copy of his resident state's current law pertaining to such state's treatment of non-resident contractors. Resident contractors actually domiciled in Mississippi, be they corporate, individuals or partnerships, are to be granted preference over nonresidents in awarding of contracts in the same manner and to the same extent as provided by the laws of the state, city, county, parish, province, nation, or political subdivision of domicile of the nonresident.

The ability to obtain any insurance required by the contract documents must be demonstrated in the bid by the means specified in the contract documents. Proof of actual insurance coverage must be submitted within five (5) business days from the bid acceptance.

In compliance with the laws of the State of Mississippi, in choosing materials for the project, the successful bidder shall be required to give preference to materials grown, produced, prepared, made or manufactured within the State of Mississippi. The foregoing notwithstanding, no preference shall be given to materials grown, produced, prepared, made or manufactured in the State of Mississippi when other materials of like quality produced outside the State of Mississippi may be purchased or secured at less cost, or any other materials of better quality produced outside the State of Mississippi can be secured at a reasonable cost. The Contractor shall not use any materials on the project that are grown, produced, prepared, made or manufactured outside of the United States. If such materials are not available, then those which are grown, produced, prepared, made or manufactured outside the United States may be used.

BIDS SHALL BE DELIVERED TO THE MAYOR'S OFFICE, SECOND FLOOR, CITY HALL BUILDING, 140 LAMEUSE STREET, BILOXI, MISSISSIPPI, 39530, OR ELECTRONICALLY SUBMITTED AT WWW.BILOXIPLANS.COM.

Bids shall be in letter form with the envelope or electronic attachment and bid marked plainly "Project No. 0000: _____" and shall be addressed to the Mayor's Office, P.O. Box 429, Biloxi, Mississippi 39533. In addition, the envelope or electronic attachment shall list the Company Name and Address, and all applicable state and local license numbers.

The City reserves the right to reject any and all bids and to waive any informality in the proposal accepted. No bidder may withdraw his bid within 60 days after the actual date of the opening thereof.

Published by order of the Municipal Clerk, this the ____ day of _____, 2022.

SEAL _____

MUNICIPAL CLERK

SEND PROOF OF PUBLICATION:

Publish Twice: January 1, 2022 & January 7, 2022

CITY OF BILOXI

SECTION 904 - NOTICE TO BIDDERS NO. 1 **CODE: (IS)**

DATE: 09/27/2017

SUBJECT: GOVERNING SPECIFICATIONS

The current (2017) Edition of the Standard Specifications for Road and Bridge Construction adopted by the Mississippi State Highway Commission is made a part hereof fully and completely as if it were attached hereto, except where modified or amended by state statutes, superseded by special provisions, supplemental specifications, or amended by revisions of the Specifications contained herein.

A reference in any contract document to controlling requirements in another portion of the contract documents shall be understood to apply equally to any revision or amendment thereof included in the contract.

In the event the plans or proposal contain references to the 2004 or 1990 Edition of the Standard Specifications for Road and Bridge Construction, it is to be understood that such references shall mean the comparable provisions of the 2017 Edition of the Standard Specifications for Road and Bridge Construction.

CITY OF BILOXI

SECTION 904 - NOTICE TO BIDDERS NO. 2 **CODE: (IS)**

DATE: 7/17/2020

SUBJECT: PROJECT SIGN

The Contractor shall furnish and install Project Sign(s), as shown below. The Contractor will erect on adequate supports and maintain one (1) neatly constructed and painted ¾" thick plywood sign approximately four feet by six feet (4' x 6'). The City Engineer will provide the colors, letters, layout, and location of the sign. No other signs will be displayed on the job site without permission of the Engineer. The displaying of sign advertisements is strictly prohibited.

CITY OF BILOXI

SECTION 904 - NOTICE TO BIDDERS NO. 4 **CODE: (IS)**

DATE: 06/09/2017

SUBJECT: DEFINITIONS AND TERMS

Wherever in these specifications or in other Contract Documents the following terms (or pronouns in place of them) are used, the following substitutions shall be made as appropriate:

"DIRECTOR"	"MAYOR"
"COMMISSION"	"CITY COUNCIL"
"HIGHWAY COMMISSION"	"CITY COUNCIL"
"DEPARTMENT"	"CITY OF BILOXI"
"ENGINEER"	"CITY ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"PROJECT ENGINEER"	"CITY ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"RESIDENT ENGINEER"	"CITY ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"CHIEF ENGINEER"	"CITY ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"CONSTRUCTION ENGINEER"	"CITY ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"STATE"	"CITY OF BILOXI"
"OWNER"	"CITY OF BILOXI"
"DESIGN ENGINEER"	"**(CONSULTANT'S NAME)**"

CITY OF BILOXI

SECTION 904 - NOTICE TO BIDDERS NO. 7 **CODE: (IS)**

DATE: 06/09/2017

SUBJECT: HIGH VOLTAGE OVERHEAD LINES

House Bill No. 1265 (Mississippi Legislature Regular Session 1988) states in part:

> No person shall, individually or through an agent or employee, perform any function or activity upon any land, building, highway or other premises if at any time during the performing of that function or activity the person performing the function or activity could be reasonably expected to move or be placed within ten (10) feet of any high voltage overhead line or if any equipment or part of any tool or material used by the person could be reasonably expected to move or be placed within ten (10) feet of any high voltage overhead line during the performance of any function or activity.
>
> No person shall, individually or through an agent or employee, operate or bring any mechanical equipment or hoisting equipment or any other equipment or part of any tools or material within ten (10) feet of any high voltage overhead line.
>
> If any person desires to carry on any function, activity, work or operation in closer proximity to any high voltage overhead line than permitted by this chapter, the person responsible for performing the work shall promptly notify the electric utility operating the high voltage overhead line, in writing, on a form to be provided by such electric utility, and shall not perform the work until mutually satisfactory arrangements have been made between such electric utility and the person or business entity responsible for performing the work.
>
> The required ten foot clearance shall not be provided by movement of the high voltage overhead line through strain impressed, by attachments, or otherwise.
>
> The person responsible for performing the work in the vicinity of the high voltage overhead lines shall at no cost, receive a written cost estimate from the utility for providing the necessary safety arrangements.
>
> "High voltage" means a voltage in excess of six hundred (600) volts between conductors or from any conductor to ground.
>
> "Overhead lines" mean all bare or insulated electrical conductors installed above the ground.
>
> "Warning sign" means a weather-resistant sign of not less than seven (7) inches by ten (10) inches reading as follows: "DANGER-UNLAWFUL TO OPERATE THIS EQUIPMENT NEARER THAN 10 FEET TO HIGH VOLTAGE OVERHEAD LINES."

> Any person who knowingly violates this chapter may be subject to civil penalty in amount not to exceed Five Thousand Dollars ($5,000.00) to be imposed by a court of competent jurisdiction against said person.

The Form entitled, "NOTICE OF WORK TO BE PERFORMED IN PROXIMITY OF HIGH VOLTAGE POWER LINES" is included in the contract documents. The top portion only of the form shall be completed, signed and returned by the Contractor upon execution of the contract. The City will transmit a copy of the signed form to each of the electric utility companies that may be involved with providing protective services.

It is not expected that the Contractor will suffer any cost from the utility company providing necessary safety arrangements when a high voltage overhead line is located on public right-of-way. When an electric utility company claims otherwise, the Contractor shall notify the Project Engineer so the City may take appropriate action.

CITY OF BILOXI

SECTION 904 - NOTICE TO BIDDERS NO. 296 **CODE: (IS)**

DATE: 06/09/2017

SUBJECT: CONTRACT TIME

Allowable calendar days for the Contract (PROJECT NAME), (PROJECT NUMBER), will be (DAYS WRITTEN OUT) (DAYS AS A NUMBER) Calendar Days.

CITY OF BILOXI

SECTION 904 - NOTICE TO BIDDERS NO. 298 **CODE: (IS)**

DATE: 06/09/2017

SUBJECT: GENERAL PROVISIONS

At least one entrance shall be kept open and maintained to each business and to each residence along the property for the duration of the project. The roadway shall be maintained for one-way traffic for residents and emergency vehicles. If the neighborhood street must be closed for a short period of time, the contractor shall notify the Engineer and the affected residents at least twenty-four hours in advance. If any public roadway must be closed during construction or a scheduled water cut off is planned, the contractor shall notify the Engineer at least three (3) working days in advance for a public service announcement to be issued.

If concrete work is included in the contract, the Contractor shall provide a slump cone on the job site at all times during construction. The slump cone shall be readily available to the City Engineer or his authorized representative any time that concrete is being poured on the project.

The Contractor shall provide a meter and backflow preventer to be connected to the fire hydrant whenever the Contractor is using City of Biloxi water. The Contractor shall submit information on the meter and backflow preventer to the City of Biloxi for approval prior to use.

CITY OF BILOXI

SECTION 904 - NOTICE TO BIDDERS NO. 1034 **CODE: (IS)**

REVISED: 06/09/2017

SUBJECT: Storm Water Pollution Prevention Plan (SWPPP) Construction Notice of Intent (CNOI) – Notice of Termination (NOT) of Coverage Form

A generic Storm Water Pollution Prevention Plan (SWPPP) was developed for this project to be used as the basis for the specific SWPPP implemented by the Contractor. The Contractor is ultimately responsible for the proper development and implementation of an acceptable SWPPP in accordance with MDEQ requirements. If modifications are made to the SWPPP during the project the Contractor shall clearly show and note the modifications on the "red-lined" drawings, which are required to be submitted with the Contractor's monthly requests for payments throughout the project.

The Contractor shall complete and submit all forms necessary for the relevant project phase(s) in accordance with MDEQ's requirements. The MDEQ requires that a completed Notice of Termination (NOT) of Coverage Form be submitted within 30 days of final stabilization. The cost of this work shall be included in the overall project cost; no separate payment shall be made.

CITY OF BILOXI

SECTION 904 - NOTICE TO BIDDERS NO. 2642 **CODE: (SP)**

DATE: 06/09/2017

SUBJECT: TRAFFIC CONTROL PLAN
(For Informational Purposes Only)

In constructing this project, the Contractor shall comply with the contract requirements of the Department's Traffic Control Plan. The purpose of the Traffic Control Plan is to maintain through and local traffic safely through construction zones.

In addition to Section 618, Maintenance of Traffic and Traffic Control Plan, of the 1990 Edition of the Mississippi Standard Specifications for Road and Bridge Construction, the Department's Traffic Control Plan includes: Subsection 104.04, 105.15, 107.07 and 107.10; Section 619: special provisions modifying Section 618 and supplements thereto; individual plan sheets applicable to the plan; and Part VI of the Manual on Uniform Traffic Control Devices (MUTCD).

The complete 2009 edition of the MUTCD may be obtained on-line at https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm or in printed form from the Superintendent of Documents Printing Office, Washington, D.C. 20402 or from the American Traffic Safety Services Association.

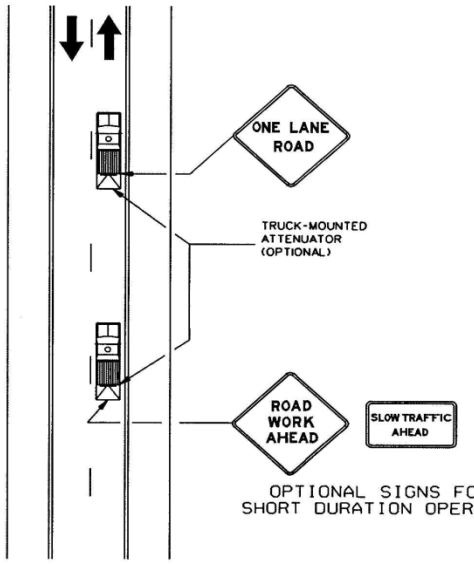
The bidder's attention is called to the contents of Part VI of the MUTCD relating to typical application of traffic control devices for mobile operations on two-lane and multilane roads.

The attached drawings which were taken from MDOT's Standard Drawing No. TCP-11 shows the traffic control plan required for mobile operations on two-lane and multilane roads.

Calling attention to the above situations in no way signifies that these are the only differences between the previous and current versions of PART VI of the MUTCD.

This Notice to Bidders is for informational purposes only. Bidders should familiarize themselves with the 2009 Edition of the MUTCD and the separate PART VI publication.

MOBILE OPERATIONS ON TWO-LANE ROAD

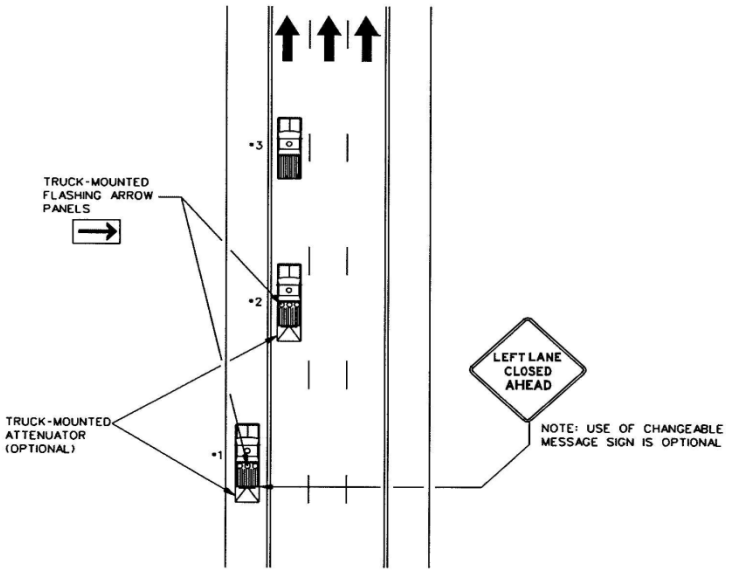


OPTIONAL SIGNS FOR SHORT DURATION OPERATION

NOTES:

1. WHERE PRACTICAL AND WHEN NEEDED, THE WORK AND PROTECTION VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS. IF THIS CAN NOT BE DONE FREQUENTLY, AS AN ALTERNATIVE, A "DO NOT PASS" SIGN MAY BE PLACED ON THE REAR OF THE VEHICLE BLOCKING THE LANE.
2. THE DISTANCE BETWEEN THE WORK AND PROTECTION VEHICLES MAY VARY ACCORDING TO TERRAIN, PAINT DRYING TIME, AND OTHER FACTORS. PROTECTION VEHICLES ARE USED TO WARN TRAFFIC OF THE OPERATION AHEAD. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, THE PROTECTION VEHICLE SHOULD MAINTAIN THE MINIMUM DISTANCE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. THE PROTECTION VEHICLE SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
3. ADDITIONAL PROTECTION VEHICLES TO WARN AND REDUCE THE SPEED OF ONCOMING OR OPPOSING TRAFFIC MAY BE USED. POLICE PATROL CARS MAY BE USED FOR THIS PURPOSE.
4. A TRUCK-MOUNTED ATTENUATOR (TMA) SHOULD BE USED ON THE PROTECTION VEHICLE AND MAY BE USED ON THE WORK VEHICLE.
5. THE WORK VEHICLE SHALL BE EQUIPPED WITH BEACONS, AND THE PROTECTION VEHICLES SHALL BE EQUIPPED WITH TWO HIGH-INTENSITY FLASHING LIGHTS MOUNTED ON THE REAR, ADJACENT TO THE SIGN. PROTECTION AND WORK VEHICLES SHOULD DISPLAY FLASHING OR ROTATING BEACONS BOTH FORWARD AND TO THE REAR.
6. VEHICLE-MOUNTED SIGNS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGN LOCATED AT A MINIMUM HEIGHT OF 48" ABOVE THE PAVEMENT. SIGN LEGENDS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.
7. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.

MOBILE OPERATIONS ON MULTILINE ROAD



NOTES:

1. VEHICLES USED FOR THESE OPERATIONS SHOULD BE MADE HIGHLY VISIBLE WITH APPROPRIATE EQUIPMENT, SUCH AS FLASHING LIGHTS, ROTATING BEACONS, FLAGS, SIGNS, OR ARROW PANELS.
2. PROTECTION VEHICLE #1 SHOULD BE EQUIPPED WITH AN ARROW PANEL. AN APPROPRIATE LANE CLOSURE SIGN SHOULD BE PLACED ON PROTECTION VEHICLE #1 SO AS NOT TO OBSCURE THE ARROW PANEL.
3. PROTECTION VEHICLE #2 SHOULD BE EQUIPPED WITH AN ARROW PANEL AND TRUCK-MOUNTED ATTENUATOR (TMA).
4. PROTECTION VEHICLE #1 SHOULD TRAVEL AT A VARYING DISTANCE FROM THE WORK OPERATION SO AS TO PROVIDE ADEQUATE SIGHT DISTANCE FOR TRAFFIC APPROACHING FROM THE REAR.
5. WHEN ADEQUATE SHOULDER WIDTH IS NOT AVAILABLE, PROTECTION VEHICLE #1 SHOULD BE ELIMINATED.
6. ON HIGH-SPEED ROADWAYS, A THIRD PROTECTION VEHICLE SHOULD BE USED (i.e., VEHICLE #1 ON THE SHOULDER (IF PRACTICAL), VEHICLE #2 IN THE CLOSED LANE, AND VEHICLE #3 IN THE CLOSED LANE).
7. ARROW PANELS SHALL BE AS A MINIMUM TYPE B, 60" X 30" IN ACCORDANCE WITH THE CRITERIA PRESENTED IN THE MUTCD.
8. WORK SHOULD NORMALLY BE DONE DURING OFF-PEAK HOURS.
9. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-101-1 **CODE: (SP)**

DATE: 09/27/2017

SECTION 101 – DEFINITION AND TERMS

Subsection 101.02 – Definitions

Delete the first two definitions dealing with A+B and A+C bidding in toto.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-102-1 **CODE: (SP)**

DATE: 09/27/2017

SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS

Subsection 102.02 – Contents of Proposal Forms.

Delete the last paragraph of Section 102.02 and add the following:

> The prospective bidder will be required to pay a deposit to the City for the sum stated in the Advertisement for each copy of the specifications/contract documents.

Subsection 102.03 - Issuance of Proposal Forms

Delete the first sentence of Section 102.03 and add the following:

> Except as hereinafter set forth, the Engineer will furnish the prospective bidder with a Proposal Form found within the Specifications.

Subsection 102.05 – Examination of Plans, Specifications, Special Provisions, Notices to Bidders and Site of Work.

Delete the last sentence of the first paragraph of Section 102.05.

Delete the third and fourth paragraphs of Section 102.05 and add the following:

> Boring logs and other records of subsurface investigations are found in Special Provision 907-203-1 "Excavation and Embankment" of this specification, if available. It is understood that such information was obtained and is intended for City design and estimating purposes. It is made available to bidders so they may have access to identical subsurface information available to the City. If available, the soil boring logs shall be reviewed by the Contractor to assist in the determination of excavation costs prior to bidding.

Delete the last paragraph of Section 102.05.

Subsection 102.06 - Preparation of Proposal

Delete the first four paragraphs of this Subsection and replace with:

> The Bidder's Proposal must be submitted on Proposal Forms prepared by the Engineer and he shall enter in figures a unit price and extension in the appropriate

columns for each bid item exclusive of those items for which a fixed contract unit price and extension are shown or proposals prepared based on a total lump sum contract price.

The Total Amount Bid shall be entered in words and figures as noted on the Proposal Forms. In case of any discrepancy in the Total Sum between the words and figures, the amount in words will govern.

When the proposal is set-up for a lump sum contract price, the bidder shall enter the total lump sum bid price on the proposal in the blank indicated on the form. The lump sum price bid shall include all labor, material, and equipment to complete the intent of the project described in the specifications and the drawings.

If any person contemplating a Proposal is in doubt as to the true meaning of any part of the Drawings, Specifications or other Contract Documents, or finds discrepancies in or omission from the Drawings or Specifications, he may submit to the Engineer a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery.

Any interpretation or correction of the documents will be made only by Addendum duly issued and a copy of the Addendum will be mailed or delivered to each person receiving a set of the Contract Documents. Neither the Owner nor the Engineer will be responsible for any other explanations or interpretations of the Contract Documents within seven (7) calendar days of the bid opening.

Any addendum issued during the time of bidding, or forming a part of the Contract Documents loaned to the Bidder for the preparation of his Proposal, shall be covered in the Proposal, and shall be made a part of the Contract. Receipt of each addendum shall be acknowledged in the Proposal.

After the original fifth paragraph of this Subsection insert the following:

No person, firm or corporation shall be allowed to make, file or to be interested in more than one Proposal for the same work, unless alternate Proposals are called for. A person, firm or corporation who has submitted a subproposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting subproposal or quoting prices to other Bidders.

The successful Bidder simultaneously with the execution of the Contract, will be required to furnish a faithful Performance Bond in an amount equal to 100 percent of the Contract Amount and a Labor and Material Payment Bond equal to 100 percent of the Contract Amount; said bonds shall be secured from a surety company satisfactory to the Owner. The forms of the Bonds the successful Bidder will be required to execute are included in the Contract Documents.

Delete the original sixth paragraph of this Subsection.

Delete the word "digitally" in the first sentence of the original 14th paragraph of this Subsection.

Subsection 102.08 – Proposal Guaranty

Delete the last paragraph of Subsection 102.08 and insert the following:

> If a bid bond is offered as guaranty, the bond must be on a form approved by the Director. The bond(s) shall be negotiated for, procured from and the premium paid to a qualified surety agent as listed below. The bonds may be made by any surety company which is authorized to do business in the State of Mississippi and listed on the United States Treasury Department's list of acceptable sureties, or such bonds may be guaranteed by a personal surety as otherwise provided for in the Mississippi Code of 1972 as referenced below. The bond shall be signed or countersigned by a qualified surety agent and also bear the signature of an "attorney-in-fact" of the surety. (Reference is made to Section 31-5-51 et seq of the Mississippi Code of 1972, Annotated, and other State statutes applicable thereto).
>
> Except as otherwise provided herein, for a personal surety, no surety or surety company shall be allowed to guarantee or write bonds for construction, alteration or repair of a public building or for public work, unless that surety is listed on the United States Treasury Department's list of acceptable sureties.

Subsection 102.09 – Delivery of Proposals.

Delete Subsection 102.09 in its entirety and insert the following:

> Each proposal shall be submitted in a sealed envelope. The outside of the envelope shall be marked clearly with all of the information required to be on the outside of the envelope in the Advertisement. Proposal forms are non-transferable and no name or names of interested parties may be shown other than those to whom the proposal was issued. The proposals may be mailed or hand delivered. All proposals shall be filed prior to the time and place specified in the Advertisement. Proposals received after the time for opening of bids will be returned to the bidder unopened.

Subsection 102.10 – Withdrawal or Revision of Proposals.

Delete Subsection 102.10 in toto and insert the following:

A bidder may withdraw or revise a proposal after it has been deposited with the City provided the City Engineer has received in writing the request for such withdrawal or revision prior to the time set for opening proposals.

Subsection 102.12 – Public Opening of Bids

Delete the first sentence of Subsection 102.12 and insert the following:

Proposals will be opened and read publicly at the time and place indicated in the advertisement.

Subsection 102.15 – Questions Regarding Bidding

Delete Subsection 102.15 in toto.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-103-1 **CODE: (SP)**

DATE: 09/27/2017

SECTION 103 – AWARD AND EXECUTION OF CONTRACT

All references to "100%" in Section 103 shall be replaced with the words "in whole or in part".

CITY OF BILOXI

SPECIAL PROVISION NO. 907-105-1 **CODE: (SP)**

DATE: 09/27/2017

SECTION 105 - CONTROL OF WORK

Subsection 105.01 – Authority of the Engineer

Delete the first sentence of the last paragraph and insert the following:

All correspondence concerning a project shall be sent to the City Engineer.

Subsection 105.06 – Cooperation with Utilities.

Delete the first two paragraphs of Subsection 105.06 and insert the following:

The Contractor shall be responsible for all coordination with private utility companies in conjunction with this project. All private utilities to be relocated, or removed shall be by the private utility company. Coordination for proper timing of private utility work shall be the responsibility of the Contractor. The Contractor shall be responsible for protecting all existing utilities to remain, all new utilities, and all utilities, which have already been relocated. Any cost incurred by the Contractor for work performed, adjacent to utility appurtenances, which requires protection or temporary adjustment or "holding" of utility appurtenances in order to perform work associated with this project, shall be the responsibility of the Contractor.

Subsection 105.07 – Cooperation between Contractors

Delete the last paragraph of Subsection 105.07 addressing railroad-crossing work in toto.

Subsection 105.08 - Construction Stakes, Lines and Grades

Delete Subsection 105.08 in its entirety and insert the following:

Subsection 105.08 - Construction Stakes, Lines and Grades. All work must accurately conform to the lines, grades and sections shown on the plans. The Design Engineer will establish bench marks and control points along the base line from which the contractor shall lay out his work in sufficient detail for competent, skilled workmen to complete the work according to the plans and specifications. This detail layout work by the Contractor shall be subject to the approval of the City Engineer or his authorized representative.

The Contractor shall furnish at his own expense an instrument person with adequate labor, survey equipment and stakes to lay out lines and grades from the base lines and benchmarks for the proper guidance of his work. Before commencing work the Contractor shall satisfy himself of the meaning of the base lines and benchmarks and their relation to the actual location of the line and grade of the proposed work. Any apparent errors must be reported to the City Engineer or his authorized representative before any work is done. The Contractor shall further supply all instruments, rod and chain persons, hubs, stakes, flagging and incidental supplies and equipment necessary to properly lay out all details of the work, in full accordance with the plans, specifications and direction of the City Engineer or his authorized representative.

The Contractor shall set alignment hubs parallel to the base line throughout the project at the hundred foot stations or as otherwise directed by the City Engineer or his authorized representative. All hubs shall have sufficient setback distance to insure against disturbance and shall be guarded by a flagged stake with the station number and offset plainly marked thereon.

Upon completion of establishing elevations on the grade control hubs, the contractor shall prepare all cut and/or fill sheets necessary to accomplish the work. He shall submit all cut and/or fill sheets so prepared to the City Engineer or his authorized representative prior to beginning his work.

The Contractor shall be held responsible for the preservation, protection and re-establishment of all control points and benchmarks (City established or otherwise) in their original positions. Any control points or benchmarks that are destroyed and/or lost by the Contractor during construction, shall be replaced by the Contractor at no additional cost to the City. Control points and benchmarks shall be re-established by a Licensed Registered Land Surveyor approved by the City Engineer or his authorized representative. All control points and benchmarks lost during construction must be re-established and approved by the City Engineer or his authorized representative prior to final acceptance of the work.

Subsection 105.12 – Removal of Unacceptable and Unauthorized Work.

In the last paragraph, change “one (1)” to “two (2)”.

Subsection 105.17 A. Notice of Intent to File a Claim.

Delete the first sentence of the first paragraph and insert the following:

Within 30 calendar days of receiving the Engineer’s decision as outlined in Subsection 104.02.4, the Contractor shall provide the Engineer with a written notice of intent to file a claim.

Subsection 105.17 B. Submission of a Claim.

Delete Item No. 1 and renumber the remaining Item Nos. 2-6 as Item Nos. 1-5.

Subsection 105.17 C. Department Decision.

Delete the first and second sentences of the third paragraph and insert the following:

> If the City decides to affirm the claim, an adjustment will be made as applicable. If the City denies the claim, the Contractor may either accept the City's decision as final or seek relief in the appropriate court of law.

Subsection 105.20 – Acceptance

Delete Subsection 105.20.1 – Partial Acceptance of a unit in toto.

Delete Subsection 105.20.4 – Final Acceptance in toto and add the following paragraphs:

> Upon written notice from the Contractor of substantial completion of all the major items of work or upon due notice from the Engineer a final inspection will be made by the City Engineer or his authorized representative. If all work provided by the contract has been completed to his satisfaction, that inspection will constitute the final inspection. If the inspection discloses any work as being unsatisfactory or incomplete, the City Engineer or his authorized representative will discuss in detail with the Contractor all discrepancies in the work. Upon correction of the work, another inspection will be made which shall constitute the final inspection provided the work has been satisfactorily completed.
>
> Prior to final payment being made, the Contractor will be required to submit to the City Engineer or his authorized representative, a maintenance guarantee to ensure against defects in workmanship or materials for a time period of two years from the date of final payment with the City of Biloxi named as the sole beneficiary. The guarantee shall be in any of the following acceptable forms:
>
> 1. Certified check from a Mississippi lender based upon a cash deposit, in a form acceptable to the City Attorney;
> 2. Irrevocable letter of credit from a Mississippi banking institution in a form acceptable to the City Attorney; or
> 3. Surety bond from a Mississippi surety bonding company in a form acceptable to the City Attorney.
>
> If, prior to the expiration of two years from the date of final payment or such a longer period of time as may be prescribed by law or by the terms of the contract, any work is found to be defective, Contractor shall promptly without cost to the

City and in accordance with City's written instructions, either correct such defective work, or, if it has been rejected by the City, remove it from the site and replace it with corrected work. If the Contractor does not promptly comply with the terms of such instructions, the City may have the defective work corrected or the rejected work removed and replaced and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid for by funds generated through the maintenance guarantee The maintenance guarantee shall be conditioned on the performance of all work necessary to warranty required public infrastructure improvements during the term of the maintenance guarantee, including work needed to repair or replace defects in workmanship or defective materials. Maintenance guarantees shall provide that in case of the Contractor's failure to repair or replace the guaranteed work during the term on the maintenance guarantee, the City shall be able to immediately obtain the funds necessary to make such repairs or replacements, including but not limited to costs associated with labor, equipment and materials.

Maintenance guarantee shall be dependent on the total value of the contract a minimum amount as shown in the table below:

Amount of Construction Contract	**Required Bond Value**
$0 - $2,500,000	$250,000
$2,500,000 - $5,000,000	$500,000
$5,000,000 - $10,000,000	$750,000
$10,000,000 - $25,000,000	$1,000,000
$25,000,000 - $50,000,000	$1,500,000
$50,000,000 - $75,000,000	$2,000,000
$75,000,000 - $100,000,000	$2,500,000
$100,000,000 - >$150,000,000	$3,000,000

The City Engineer shall release the maintenance guarantee at the end of the term of the guarantee only after an inspection of the work has been performed and work performed under the contract is shown to be in proper working order.

In the event a bond is used as the guarantee, the form of the bond shall be that acceptable to the City. The bond shall be negotiated for, procured from and the premium paid to a qualified surety agent as listed below. The bonds may be made by any surety company which is authorized to do business in the State of Mississippi and listed on the Unites States Treasury Department's list of acceptable sureties, or such bonds may be guaranteed by a personal surety as otherwise provided for in the Mississippi Code of 1972 as referenced below. The bond shall be signed or countersigned by a qualified surety agent and also bear the signature of an "attorney-in-fact" of the surety. (Reference is made to Section 31-5-51 et seq

of the Mississippi Code of 1972, Annotated, and other State statutes applicable thereto).

Except as otherwise provided herein, for a personal surety, no surety or surety company shall be allowed to guarantee or write bonds for construction, alteration or repair of a public building or for public work, unless that surety is listed on the United States Treasury Department's list of acceptable sureties.

The final payment will not be issued until after the final as-built drawings have been submitted, reviewed for accuracy and accepted. Final as-built drawings must be provided in both digital and hard copies. Digital files shall consist of a complete .PDF of the as-built drawings as well as the CADD files (.dgn, .dwg or .dxf format; Microstation or AutoCAD, latest versions acceptable to the City). One (1) full size hard copies shall also be provided. A digital copy of the original design drawings is available upon request.

As-built drawings in digital format shall have all field changes incorporated into the original contract drawings. Hard copies of as-built drawings shall show the redlined field changes on the original contract drawings. Redlines on hard copies shall stand out by color.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-106-1 **CODE: (SP)**

DATE: 06/12/2017

SECTION 106 - CONTROL OF MATERIALS

Subsection 106.02.2 - Contractor Furnished Sources

Delete Subsection 106.02.2 in its entirety and insert the following:

The Contractor shall provide sources of materials meeting the requirements of the contract and shall bear all costs involved, including the cost of sampling and testing for source approval.

The Contractor shall assume the cost of acceptance sampling and testing during production and use of the materials.

Subsection 106.02.3 - All Sources

Delete Subsection 106.02.3 in its entirety and insert the following:

In compliance with the laws of the State of Mississippi, in choosing materials for the project, the successful bidder shall be required to give preference to materials grown, produced, prepared, made or manufactured within the State of Mississippi. The foregoing notwithstanding, no preference shall be given to materials grown, produced, prepared, made or manufactured in the State of Mississippi when other materials of like quality produced outside the State of Mississippi may be purchased or secured at less cost, or any other materials of better quality produced outside the State of Mississippi can be secured at a reasonable cost.

All materials that the successful bidder will use on the project shall be grown, produced, prepared, made or manufactured within the United States.

Subsection 106.03 – Samples, Tests, and Cited Specifications

Delete the second paragraph of Subsection 106.03 and insert the following:

All testing shall be by an independent testing laboratory approved for use by the Mississippi Department of Transportation. All costs to the contractor for tests or sampling or any associated costs for testing or sampling shall be the responsibility of the contractor.

The City reserves the right to retest all materials even though they have been tested and approved earlier and to reject all retested materials that do not meet the

requirements of the contract. All costs associated with retesting shall be the responsibility of the Contractor.

All test reports shall be submitted to the City Engineer or his authorized representative for review and approval. Any material used on the project without prior written approval by the City Engineer or his authorized representative shall be at the Contractor's own risk. Any material, which is incorporated into the job that is not approved by the City Engineer or his authorized representative shall be removed and replaced at no additional cost to the City.

Delete the last paragraph of Subsection 106.03 in its entirety.

Subsection 106.07 - Foreign Materials

Delete Subsection 106.07 in its entirety and insert the following:

The Contractor shall not use any materials on the project that are grown, produced, prepared, made or manufactured outside the United States.

Subsection 106.12 – Substitute Materials

Delete Subsection 106.12 in its entirety and insert the following:

Any materials to be used as a substitute to any material specified in the contract shall be approved by the City Engineer or his authorized representative prior to use. The contractor shall be responsible for submitting all information needed by the City Engineer or his authorized representative to show all properties, characteristics, test reports, etc. to make an informed decision as to the compliance, of the proposed material, with the contract.

CITY OF BILOXI

SPECIAL PROVISION 907-107-1 **CODE: (SP)**

DATE: 09/27/2017

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Subsection 107.06 – Sanitary, Health and Safety Provisions

After the second paragraph of Subsection 107.06 insert the following paragraph:

> The Contractor shall require all workers to wear long pants, shirt and shoes or boots at all times on the job site.

Subsection 107.07 - Public Convenience and Safety

Add the following paragraph after the last paragraph of Subsection 107.07:

> In the event of an approaching tropical storm, hurricane, etc., the Contractor shall, at the direction of the City Engineer or his authorized representative, prepare the jobsite by securing any and all materials, equipment, etc. This includes anchoring any job trailer if it is to stay on the site during the storm. The Contractor shall assure the City Engineer or his authorized representative that all drainage and utilities on the site are in suitable working condition. The Contractor shall absorb any associated costs.

Subsection 107.14.2 - Liability Insurance.

Subsection 107.14.2.1 – General.

Delete Subsection 107.14.2.1 in toto and insert the following:

Contractor shall provide insurance as required in Part 7.7 of Section 902, Contract Form.

Subsection 107.17 - Contractor's Responsibility for Work

Add the following paragraph after the last paragraph of Subsection 107.17:

> The Contractor shall keep one record copy of all specifications, drawings, addenda, modifications and shop drawings at the site in good order and annotated to show all changes made during the construction process. These shall be readily available to the City Engineer or his authorized representative throughout construction. The Contractor shall submit record drawings with each pay request. These shall be in

the form of "red lines" or mark-ups on the project plans. These drawings shall be reviewed and approved by the City Engineer or his authorized representative prior to the pay request being processed. The final record drawings in both digital (dgn or dxf format) and hard copy form shall be delivered to the City Engineer or his authorized representative for the owner with the final request for payment.

Subsection 107.22.2 -Clearing and Grubbing, Haul Roads, Waste Areas, Plant Sites or Other Areas Occupied by the Contractor.

Delete the seventh and eighth paragraphs of this section relating to open burning in toto.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-108-1 **CODE: (SP)**

DATE: 11/20/2019

SECTION 108 - PROSECUTION AND PROGRESS

Subsection 108.01.1 – General

Delete the last sentence of the last paragraph and insert the following:

> The Engineer may suspend work wholly or in part and withhold payments because the Contractor's failure to make prompt payment within 15 calendar days as required above.

Subsection 108.03.1 - Progress Schedule

Delete Subsection 108.03.1 in its entirety and insert the following:

> Subsection 108.03.1 - Progress Schedule. The Contractor shall submit a progress schedule to the City Engineer or his authorized representative for his approval no later than three (3) working days after the Notice to Proceed date. The schedule will be in the form of a bar graph indicating the controlling phases of work, the bid sheet sequence numbers of all pay items in each phase, and the beginning and the ending time for each phase. At least one phase of work will be shown to begin not later than the date for beginning of contract time, and at least one phase of work will be shown to be in progress until all work is scheduled to be complete. The schedule shall indicate the sequence and interdependency of all Work activities.
>
> The Contractor's progress schedule shall reflect a realistic rate of prosecution with all work to be completed within the specified contract time. In preparation of his progress schedule, the Contractor shall take into consideration all controlling factors and specified limitations. The schedule shall show work broken down by street name (if applicable) and then by station number so that a logical progress of work can be followed.
>
> An approved progress schedule shall be in effect until the date on which a revised schedule is approved. The approved progress schedule will be the basis for establishing major construction operations, contract time assessment, and for checking the progress of the work.
>
> An updated progress schedule shall be delivered to the OWNER with each pay request. Failure to submit an up to date progress schedule shall stop the pay estimate process. The pay estimate will be held or returned to the Contractor until an updated

schedule is submitted. Any revisions to the progress schedule shall be submitted to the OWNER for approval.

Monthly schedule updates shall include the following:

a) Activity Status Report
b) Proposed Revisions (or changes in construction sequence) Report
c) Narrative Report containing the following information:
    a. Description of overall Project status
    b. Description of problem areas
    c. Current and anticipated delays to include the cause of delay; corrective action and adjustments of schedule to correct the delay; and any known or potential impact of the delay on other activities or milestones
    d. Pending items and status thereof, including but not limited to:
        i. Pending Change Orders that include time extensions
        ii. Other Issues relating to Contract Time (weather, material delivery, etc.)
    e. Contract Completion Date Status:
        i. If ahead of schedule, note the number of calendar days ahead
        ii. If behind schedule, note the number of calendar days behind
    f. Any Other Project or Schedule Issues/Concerns

Whenever it becomes apparent from the current monthly updated Schedule that the Contract completion date will not be met, the Contractor agrees that they will take some or all of the following actions. However, these actions must first be reviewed and approved by the OWNER. These actions will be taken by the Contractor at NO additional cost to the OWNER.

1. Increase construction manpower to eliminate the backlog of work.
2. Increase the number of hours worked per day and/or shift, increase the number of days worked per week, etc. However, this shall not be construed as permitting the Contractor to violate the OWNER'S work hour restrictions per Ordinance.
3. Reschedule activities to expedite the work and eliminate the backlog of work.

Any requests for an adjustment in Contract Time shall be submitted by the Contractor in writing and shall include a Time Impact Analysis. Each Time Impact Analysis shall provide information justifying the request and stating the extent of the adjustment requested for each specific change or alleged delay. This analysis shall be done at no additional cost to the OWNER.

Subsection 108.06 - Determination and Extension of Contract Time.

Delete Subsection 108.06 in its entirety and insert the following:

Subsection 108.06 - Determination and Extension of Contract Time. Contract Time on calendar day projects will be established by the issuance of the Notice to Proceed and a Completion Date, which will be determined at the Preconstruction Conference. Time is continually charged against the project from the date of the Notice to Proceed to the Completion Date. The span of time allowed for the completion of the physical features of work included in the contract will be indicated in the contract documents and will be known as "Contract Time."

The Contractor shall provide sufficient materials, equipment and labor to guarantee the completion of the project in accordance with the plans and specifications within the Contract Time.

Percent complete shall be determined by comparing the total money earned to date by the Contractor, minus any payment for advancement of materials, to the total dollar amount of the contract. The percentage elapsed time shall be calculated as the direct ratio of the expired Calendar Days to the total Calendar Days provided for in the Contract.

When the “percent complete” lags more than 20 percent behind the “percent time lapsed”, the Engineer shall notify the Contractor that they have seven (7) calendar days to submit a written statement and revised progress schedule indicating any additional equipment, labor, materials, etc. to be assigned to the work to ensure completion within the specified contract time. Failure to submit the revised schedule may result in withholding of the monthly estimate. When the “percent complete” lags more than 40 percent behind the “percentage of elapsed time”, the Contract may be terminated.

On Calendar Day contracts, an extension of contract time may be granted for unforeseen utility delays, abnormal delays caused solely by the City or other governmental authorities, or unforeseeable disastrous phenomena of nature of the magnitude of earthquakes, hurricanes, named tropical storms, tornadoes, or flooded essential work areas that are deemed to unavoidably prevent prosecuting the work.

The span of time allowed in the contract as awarded is based on the quantities used for comparison of bids. If satisfactory fulfillment of the contract requires performance of work in greater quantities than those set forth in the proposal, the time allowed for completion shall be increased by Calendar Days in the same ratio that the cost of such added work increases the total value of the original contract. This is exclusive of the cost of work altered by an approved Change Order for which a time adjustment has already been made.

Additional contract time for weather days will be determined using the Keesler AFB monthly climatology report. Additional contract time may be approved for any days that have precipitation of 0.5 inches or greater, day for day. Weather days will not be automatically granted, in order to be considered, a request for weather

days shall be included in the monthly schedule update submitted with the pay estimate as referenced in Section 108.03.1. To justify days in addition to the days reported by the Keesler climatology reports, the contractor is required to provide a the updated schedule showing the impact along with a written narrative and/or pictures with the monthly schedule update.

Liquidated Damages as set forth under the heading "Per Calendar Day" in the "Schedule of Deductions for Each Day of Overrun in Contract Time," Subsection 108.07, shall be applicable to each Calendar Day after the Specified Completion Date, or authorized extension thereof, and until all work under the contract is completed.

Subsection 108.07 - Failure to Complete the Work on Time

Delete the last paragraph of Subsection 108.07 and add the following paragraph:

The applicable daily charge will be made for each calendar day after the expiration of contract time. Daily charges, as shown above, will not be made during any required waiting period for placement of pavement markings as set forth in Subsection 618.03 provided all other work is complete and during the specified growth and coverage of the vegetative items as provided in Subsection 210.01.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-109-1 **CODE: (SP)**

DATE: 09/27/2017

SECTION 109 – MEASUREMENT AND PAYMENT

Subsection 109.04.1 – Supplemental Agreement.

Delete the first and second paragraphs and insert the following:

> When the Supplemental Agreement process is initiated for unit price contracts, the unit prices in the original Contract shall stand. For lump sum items, the Contractor will be required to submit to the Engineer a detailed breakdown for material, labor, equipment, profit and overhead. The total allowable mark-up, which includes Contractor as well as Subcontractor work, shall not exceed 20%, which also includes tax and bonds.

Subsection 109.04.2 – Force Account Agreement.

Delete the first paragraph of (h) Miscellaneaous.

Subsection 109.06 – Partial Payments

Subsection 109.06.1 - General

Add the following paragraphs after the last paragraph of Subsection 109.06.1:

> In addition, the Engineer may refuse to approve the whole or any part of any payment if, in his opinion, he is unable to make such representations to the City. He may also refuse to approve any such payment, or because of subsequently discovered evidence or the result of subsequent inspection or tests, nullify any such payment, or any part of any payment, previously approved to such extent as may be necessary in his opinion to protect the City from loss because:
>
> (a) Completed work or existing property has been damaged by the Contractor or his Subcontractors, requiring replacement or repair;
>
> (b) The work for which payment is requested cannot be verified or was not verified by the City at the time of payment, but subsequent verifications revealed discrepancies;

(c) The City Engineer or his authorized representative verifies the work and the City pays for the work, but subsequent discoveries reveal discrepancies between the Contract and the payment.

(d) Claims or Liens have been filed, or there is reasonable evidence indicating the probable filing thereof;

(e) The Contract price has been reduced because of Modifications;

(f) The City has been required to correct defective Work, complete the work, or maintain traffic control due to unsafe conditions.

(g) Of unsatisfactory prosecution of the Work, including failure to clean up the project site.

(h) Of persistent failure to cooperate with other contractors on the Project and persistent failure to carry out the Work in accordance with the Contract Documents;

(i) Of liquidated damages payable by the Contractor; or

(j) Of any other violation thereof, or failure to comply with, the provisions of the Contract Documents.

Subsection 109.06.2 – Advancement on Materials.

In the fourth paragraph, change "$10,000" to "$2,000".

Subsection 109.06.3 - Retainage

Delete Subsection 109.06.3 in toto and insert the following:

Retainage will be withheld according to the following:

(a) When the value of earned work is less than 50 percent of the value of work scheduled for completion by the approved progress schedule, the amount to be retained shall be five percent of the value of the earned work.
(b) When the value of earned work is greater than 50 percent of the value of work scheduled for completion by the approved progress schedule, but prior to final completion, the amount to be retained shall be two and one-half percent of the value of the earned work, at which time 50 percent of the retainage held to date shall be returned. Reduction in retainage shall be subject to conditions as stated in the Contract.

Subsection 109.07 – Changes in Material Costs

Delete Section 109.07 in toto.

Subsection 109.11 – Acceptance and Final Payment

In the last sentence of the last paragraph, change “one (1)” to “two (2)”.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-201-1 **CODE: (SP)**

DATE: 06/14/2017

SECTION 201 - CLEARING AND GRUBBING

Subsection 201.03.1.2 - Clearing and Grubbing

Delete the fifth paragraph of Subsection 201.03.1.2 in toto and insert the following paragraph:

> The burning of the waste vegetation resulting from the clearing and grubbing will not be allowed on this project.

Change the first sentence of the sixth paragraph to read:

> Materials and debris shall be removed from the right-of-way and disposed of outside the limits of view from any public road or facility.

Subsection 201.04.1 - Lump Sum Basis

Add the following paragraph after the last paragraph of Subsection 201.04.1:

> Backfill material used for filling any voids existing after the removal of any stumps or any other vegetation will not measured for payment.

Subsection 201.04.2 - Area Basis

Add the following paragraph after the last paragraph of Subsection 201.04.2:

> Backfill material used for filling any voids existing after the removal of any stumps or any other vegetation will not measured for payment.

Subsection 201.05.2 - Area Basis

Delete Subsection 201.05.2 in toto and insert the following paragraph:

> The work under this item, measured as prescribed above, will be paid for at the contract unit price per square yard or acre, which shall be full compensation for completing the work.

Subsection 201.05 – Basis of Payment.

Following the phrase “Payment will be made under” add the following pay item number:

907-201-E: Clearing and Grubbing - per square yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-202-1 **CODE: (SP)**

DATE: 06/14/2017

SECTION 202 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Subsection 202.01 - Description

At the end of the first paragraph, add the following:

The work covered by this section also consists of furnishing all labor, equipment and materials and performing all operations in connection with the saw cutting of and asphalt surfaces, as indicated on the plans, as determined in the field, and as specified herein.

Subsection 202.03.1 – General

At the end of the last paragraph, add the following:

In the areas of the project where existing concrete surfaces must be protected and clean match lines maintained between an existing concrete surface and a new concrete curb, driveway, sidewalk, etc., the existing concrete shall be saw cut the full thickness of the structure [i.e., a four inch (4”) driveway will require a saw cut depth of four inches (4”)]. Areas to be saw cut will be determined in the field by the City Engineer or his authorized representative. Saw cutting is to be performed along lines set and laid out by the Contractor. The City Engineer or his authorized representative may eliminated the need for a particular saw cut by required the Contractor to remove the concrete back to the nearest construction joint if a construction joint is within five feet (5’) of where the saw cut is planned to be performed. If the saw cut is eliminated, the additional concrete removal shall be performed in accordance with and paid under “Excess Excavation”.

In areas of the project where existing asphalt surfaces must be protected and clean match lines maintained between an existing asphalt surface and new asphalt, the existing asphalt shall be cut the full thickness of the structure [i.e. a six inch (6”) asphalt pavement will require a cut depth of six inches (6”)]. The Contractor shall use a saw, wheel, or any other method approved by the City Engineer or his authorized representative to cut the existing asphalt surface. Areas where cutting is necessary will be decided in the field by the City Engineer or his authorized representative. Cutting is to be performed along lines set and laid out by the Contractor.

Subsection 202.03.2 – Salvage

Delete Subsection 202.03.2 in its entirety and insert the following paragraphs:

The work covered by this section consists of furnishing a credit to the City for all items salvaged by the Contractor during the execution of this project. All costs for labor, equipment, materials, tools, storage facilities, and services required for the proper removal and eventual salvage of any salvageable materials designated for removal or replacement as part of this contract shall be included in the net salvage value credited to the City.

The Contractor shall be responsible for the proper cleaning of all materials designated for salvage which may require additional cleaning or preparation in order to comply with applicable laws or requirements of the recipient of the salvageable materials.

The Contractor shall have the sole responsibility to identify which existing items may be salvaged from the job.

Subsection 202.03.4 - Removal of Pipe

Add the following paragraph after the last paragraph of Subsection 202.03.4:

This item includes the removal, loading, hauling and disposal off the site of all existing pipe specified to be removed. The Contractor shall dispose of any and all types of pipe (including transite pipe) removed during construction and any contaminated materials associated with the removal of said pipe or structures in accordance with the rules and regulations of the Department of Environmental Quality, the Environmental Protection Agency and all other federal and state agencies. This item also includes the cost of placing and compacting backfill in the trench from which the pipe was removed.

Backfill shall be suitable existing material or borrow material meeting the requirements of Subsection 203.01.4. Backfill shall be placed in six inch (6") to eight inch (8") lifts and compacted to 95% density in accordance with ASTM D1557 as stated in Subsection 907-700.04.

Add the following subsection after Subsection 202.03.5:

Subsection 202.03.6 – Removal & Reinstallation of Existing Signs and Posts. The Contractor shall carefully remove and store existing traffic signs, street signs, and sign posts that hamper construction and reinstall the signs and posts at the original location unless another location is designated by the City Engineer or his authorized representative. The Contractor shall take precautions to ensure that the signs and posts are not damaged during removal, storage, or reinstallation. If any of the signs or posts

is damaged in the opinion of the City Engineer or his authorized representative, the Contractor shall replace them at his own expense.

Subsection 202.04 - Method of Measurement

Add the following paragraphs after the first paragraph of Subsection 202.04:

Removal and disposal of abandoned utility lines (sanitary sewer lines and services, water lines and services, gas lines and services, etc.) smaller than four inch (4") nominal inside diameter shall not be measured for separate payment. The cost thereof shall be included in the unit prices bid for other items. Removal and disposal of all sizes of existing water and sanitary sewer services (including water meters, meter boxes and clean-outs) shall not be measured for separate payment. The cost thereof shall be absorbed in the cost of the installation of the new service line.

Removal of pipe will be measured by the length in linear feet as specified for the nominal inside diameter size intervals of 4 to 18 inches (4”-18”), 20 to 36 inches (20”-36”) and over 36 inches in diameter along the centerline of the pipe to be removed to the center of the intersecting line or to the farthest extent of terminal fittings. No deductions will be made for fittings, valves, etc. Removal of fire hydrants, water valves and boxes, etc. shall not be measured for separate payment, but shall be absorbed in the cost bid for the removal of pipe. Excavation, dewatering, backfilling, sheathing, shoring, etc. will not be measured separately. Removal of arch pipe shall be measured and paid for per its equivalent circular pipe size (i.e. nominal inside diameter equivalent).

Removal of asphalt and concrete pavement will be measured by the square yard per the thickness intervals of 0 to 6 inches (0”-6”) and over 6 inches (over 6” thick). The removal of concrete pavement overlaid with asphalt pavement will be measured by the square yard. The removal of any brick roadways overlaid with concrete and/or asphalt pavement shall be measured by the square yard and included in the pay item for “Removal of Concrete Pavement Overlaid with Asphalt”

The removal of driveways and sidewalks will be measured by the square yard and shall include all types of pavement, including but not limited to, concrete, asphalt and brick. The removal of gravel and/or dirt driveways will not be measured for separate payment.

The removal of curb will be measured by the linear foot along the face of curb or flow line of the gutter. No deduction will be made for curb and gutter running the length of driveways. Deduction in length will be made for drainage structures such as catch basins and inlets installed in the curbing.

The pay item, “Removal of Obstructions (LVM) –per cubic yard,” shall include the removal of manholes (storm and sanitary sewer), catch basins and inlets discovered

during construction that are not shown to be removed on the plans. This pay item shall also include any other unknown obstruction encountered during construction, which would hinder the completion of the project such as trees, old pavements and roadbeds, concrete footer and foundations, etc.

Catch basins, manholes (storm and sanitary sewer), junction boxes, inlets, headwalls, etc. that are shown to be removed on the plans shall not be measured for separate payment and shall be absorbed in the costs bid for other items.

The removal and reinstallation of existing signs and posts, guard-rails, etc. will not be measured for direct payment, but shall be considered a necessary part of the construction, and the cost shall be absorbed in the costs bid for other items.

Salvage of items removed from the site shall be measured as a lump sum and shall be the total value of all items removed from the job, which the Contractor deems as having any salvage value. Based on the Bid Proposal values assigned to Salvage of Removed Items represent a reduction of the overall contract price.

The linear foot of actual saw cut performed shall be field measured. The Contractor shall make no double measurements for any cuts in the same area due to incorrect measurement and/or negligence.

Subsection 202.05 - Basis of Payment

Add the following paragraph after the last paragraph of Subsection 202.05:

Obstruction items stipulated for removal and disposal under 907-202-C shall be paid for at the contract unit price, which shall be full compensation for completing the work.

Payment for saw cutting shall be made at the contract unit price in the proposal, which price shall be full compensation for saw cutting all asphalt pavement, curbs, etc.

Following the phrase “Payment will be made under” add the following pay item numbers:

907-202-B: Removal of Pipe (4”-18” in diameter)	-per linear foot
907-202-B: Removal of Pipe (20”-36” in diameter)	-per linear foot
907-202-B: Removal of Pipe (over 36” in diameter)	-per linear foot
907-202-B: Removal of Asphalt Pavement (0”-6” thick)	-per square yard

907-202-B: Removal of Asphalt Pavement (over 6” thick)	-per square yard
907-202-B: Removal of Concrete Pavement (0”-6” thick)	-per square yard
907-202-B: Removal of Concrete Pavement (over 6” thick)	-per square yard
907-202-B: Removal of Concrete Pavement Overlaid with Asphalt	-per square yard
907-202-B: Removal of Paved Driveways	-per square yard
907-202-B: Removal of Sidewalks	-per square yard
907-202-B: Removal of Curb	-per linear foot
907-202-C: Removal of Obstructions (LVM)	-per cubic yard
907-202-D: Salvage Value of Removed Items	-per lump sum
907-202-E: Saw Cutting of Asphalt Surfaces	-per linear foot
907-202-E: Saw Cutting of Concrete Surfaces	-per linear foot

CITY OF BILOXI

SPECIAL PROVISION NO. 907-203-1 **CODE: (SP)**

DATE: 06/14/2017

SECTION 203 - EXCAVATION AND EMBANKMENT

Subsection 203.01.1 – Unclassified Excavation

Add the following paragraph to the end of Subsection 203.01.1:

If soil borings were taken and made a part of this specification, the Contractor shall be responsible for reading the soil boring report(s) made a part of the specifications and base the excavation cost accordingly.

Subsection 203.01.6 – Excess Excavation

Delete the second sentence of Subsection 203.01.6 and insert of the following:

Excess excavation may include any type, kind, or class of excavation which the Engineer, Owner, or his authorized representative determines must be removed from the right-of-way or project site. The excavation and disposal of material displaced from the installation of new utility lines (storm drain, water, sewer, etc.) and structures (manholes, inlets, boxes, etc.) shall also be measured and paid for as excess excavation.

Subsection 203.03.8.6 – Backfill and Embankment Formation Adjacent to Structures

Delete the fifth paragraph of Subsection 203.03.8.6 and insert the following paragraph:

The work shall be conducted in a manner that the Contractor's testing laboratory can make the necessary test for compaction as the work progresses.

Subsection 203.03.8.7 – Compaction of Embankments

Delete the fifth paragraph of Subsection 203.03.8.7 and insert the following paragraph:

For basement and design soils, the required density shall be at least 95 percent (95%) in accordance with ASTM D 1557, with no minus tolerances allowed. If a density test fails, retests shall be performed at the Contractor's expense until a passing density is attained.

Subsection 203.04.3 – Borrow Excavation – Contractor Furnished

Delete the first sentence of Subsection 203.04.3 and insert the following sentence:

Contractor furnished borrow will be measured in accordance with 109.01 by the cubic yard FM or FME.

Delete the third paragraph of Subsection 203.04.3 and insert the following paragraphs:

Undercut that is unsuitable for placement in the designated roadway shall be disposed of at an offsite location provided by the Contractor and shall be measured and paid for as Excess Excavation as provided in this Section.

Material which has been removed from the site due to excessive moisture content but which is returned after proper spreading and drying, shall be paid for at 25% of the contract unit price bid for pay item 907-203-EX, Borrow Excavation (FM).

Subsection 203.05 – Basis of Payment

Under "Payment will be made under" delete pay items 203-EX and add the following:

907-203-EX: Borrow Excavation (AH)(FM or FME)(Class _____) - per cubic yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-206-1 **CODE: (SP)**

DATE: 06/14/2017

SECTION 206 - STRUCTURE EXCAVATION FOR CONDUITS AND MINOR STRUCTURES

Delete Section 206 in its entirety.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-208-1 **CODE: (SP)**

DATE: 06/14/2017

SECTION 208 – CURED-IN-PLACE-PIPE (CIPP)

208.01 - GENERAL

208.01.1 - Summary. This includes the reconstruction of existing sewer/drain lines by forming a new pipe within an existing deteriorated pipe, which has generally maintained its original shape. The process is defined as the reconstruction of sewer/drain lines by installation of a thermosetting resin impregnated flexible felt fiber tube, coated on one side with polyurethane, which is installed into the existing sewer line utilizing a water column or air/steam inversion.

Curing is accomplished by circulating hot water or heated air throughout the length of the inverted tube to cure the thermosetting resin into a hard impermeable pipe with the polyurethane coating on the inside surface of the new pipe.

The pipe shall extend the full length of the original pipe and shall provide a structurally sound, jointless, close fitting, and corrosion resistant cured-in-place pipe. The cured-in-place-pipe (CIPP) shall provide flow capacity equal to or greater than 100% of the original pipe's flow capacity when new.

208.01.2 – Submittals. The following submittals will be required from the Contractor during the course of the project. The numbers of sets of each are as stated.

A. Shop drawings, catalog data, and manufacturer's technical data showing complete information on material composition, physical properties, and dimensions of new pipe and fittings. Include manufacturer's recommendation for handling, storage, and repair of pipe and fittings damaged. Four sets.
B. Detail drawings and written description of the entire construction procedure to install pipe, bypass sewage flow and reconnection of sewer service connections. Two Sets.
C. Certification of workmen training for installing pipe. Two Sets.
D. The CCTV DVDs and NASSCO PACP coded defect report shall be submitted to Owner's Representative before and after new pipe installation. Two copies.
E. Contractor shall provide to the City Engineer or his Authorized Representative, with the videos and defect report, an exhibit that is color coded to reflect the NASSCO PACP standard mainline defect ratings in 5 point increments (0-5,6-

10,11-15,16-20, etc…). The Engineer will provide the Contractor with paper or digital copies of the basemap to use in preparation of the required exhibits.

F. Two (2) copies of an exhibit recommending the location of point repairs and a schedule of values in accordance with the Unit prices shown on the Proposal Form. Approval in writing for making point repairs shall be made to the Contractor prior to commencement of work.

208.01.3 - Project Conditions

A. Available data and records are indicated in contract documents.
B. Public Notification Program:
   1. Deliver written notices to each home or business 48 hours before commencement of work being conducted on section, including a local telephone number of Contractor contact for inquiries or complaints.
   2. Provide owner or occupant a summary of work to be completed, and time and duration of service interruption to building.
   3. Contact any home or business that cannot be reconnected within time stated in written notice.

208.02 - PRODUCTS

208.02.1 Resin - The resin used shall be a high-grade corrosion resistant polyester, vinyl ester or epoxy and catalyst system specifically designed for the cured-in-place-pipe (CIPP) being installed. The minimum length shall be that deemed necessary by the engineer to effectively span the pipelining distance of the necessary sectional repair unless otherwise specified. In most cases complete reaches of pipe will be lined (inside face of manhole to inside face of manhole). The line lengths shall be verified in the field before impregnation of the tube with resin.

208.02.2 General Requirements of CIPP - The finished pipe must be such that when the thermosetting resin cures, the total wall thickness will be a homogeneous and monolithic felt and resin composite matrix that will be chemically resistant to withstand internal exposure to domestic sewerage. When cured, the CIPP must form a mechanical bond with the existing conduit.

208.02.3 Reference Specifications - Installation and material tests of cured-in-place-pipe (CIPP) must meet the minimum requirements demonstrated in the following ASTM standards:

ASTM F-1216 Standard Practice for the Installation of Cured-in-Place Pipe by Inversion Lining

ASTM D-638 Test Method for Tensile Properties of Plastics
Tensile Strength 3,000 psi

ASTM D-790 Test Method of Flexural Properties of Plastics
Flexural Strength 4,500 psi
Flexural Modulus 250,000 psi

208.02.4 - Pre-Qualification

A. Insituform, Inc., Suncoast Infrastructure, Inc. and National Liner are pre-qualified installers of CIPP and their liner materials are pre-approved.

B. Pre-approval of products and installers is required to be classified as Commercially Acceptable.

C. To be considered Commercially Acceptable, the product and the installer must demonstrate full compliance with the requirements outlined below. Products and installers deemed Commercially Acceptable will be allowed to bid as specified.

D. For a product to be considered Commercially Acceptable, a minimum of 500,000 feet or 2,500 line sections of successful wastewater collection system installations in the U.S. must be documented to assure commercial viability. In addition, the Product shall have been in successful service within the wastewater collection system of the Owner (or some other city, town or county within the United States of America for a minimum of two years.)

E. Other installers of CIPP wishing to be pre-qualified to install CIPP must submit a request package to the Owner no later than 10 days prior to the Bid Date.

208.02.5 - Material Test and Pipe Design

A. Material Tests - Independent material tests for compliance with this specification all be made according to the applicable ASTM standards. A certificate of compliance shall be provided for all materials furnished under this specification.

B. Liner thickness shall be designed by Contractor to support all dead loads, live loads and groundwater loads imposed. Contractor shall submit design calculations to Engineer prior to fabrication.

208.03 - EXECUTION

208.03.1 The Owner shall provide free access to water hydrants for cleaning, inversion and other work items requiring water. Owner shall provide rights of access along existing easements and streets. Any additional access paths that have been negotiated by the Owner are shown on the plans. Contractor is responsible for providing appropriate traffic control for his operations throughout this project.

208.03.2 Sewers shall be cleaned of all debris, roots and other materials that would prohibit access to the sewer lines, video inspection equipment and installation of the CIPP liner. Cleaning is defined as normal, heavy, and mechanical cleaning. Normal cleaning will consist of two passes of high-pressure cleaning equipment. Heavy cleaning will consist of additional passes as necessary and includes root removal. Mechanical cleaning will consist of the use of specialized attachments specifically designed to remove built-up materials on the inside of the host pipe that cannot be removed by normal cleaning equipment.

208.03.3 Removal of protruding taps shall be required where taps would prohibit the access of the video equipment or proper installation of the CIPP tubing.

208.03.4 Reverse setups will only be allowed for blockages that require external repair prior to CIPP installation. All other blockages must be removed from the host pipe by means of standard cleaning equipment or mechanical cleaning equipment.

208.03.5 The Contractor will be required to locate buried manholes as directed by the Engineer. Location of manholes, by whatever means or technology that the contractor chooses to use, shall include uncovering the manhole, exposing and removing the cover. Modifications such as demolition and reconstruction will be made at the direction of the City Engineer or his Authorized Representative.

208.03.6 The Contractor shall be responsible for providing vacuum cleaning equipment to remove and dispose of materials cleaned from the host pipe and the manhole/catch basins inverts. All solids shall be removed at the downstream manhole of the section being cleaned. Passing material from one sewer segment to another will not be permitted. The Contractor is responsible for obtaining all necessary permits and/or permission for the disposal of the materials removed at an approved location. Contractor shall submit to the Owner's Representative the appropriate documentation regarding disposal sites and formal agreements with the site owner a minimum of 72 hours prior to commencement of the work.

208.03.7 CCTV Inspection- Sewers to be lined with CIPP shall be CCTV inspected with a 360 degree pan and tilt color camera. An assessment of the sewers shall be made in accordance with the NASSCO PACP reporting format and coding standards.

208.03.8 Identification and Premeasurement of Lateral Connections – At each connection the operator will stop and turn the camera lens toward the lateral, thereby inspecting the first 8 to 12 inches of the connection. If there is still a doubt as to whether or not the connection is live, additional "dye and flush" tests shall be preformed. Owner's representatives will review this process live or review the video tapes to verify and approve which laterals are to be reinstated. All laterals will be directly measured from the back wall (opposing wall) of the basis manhole, typically the downstream manhole.

208.03.9 Cleaning shall be provided as necessary to ensure proper inversion of the cured-in-place-pipe.

208.03.10 Bypass of Flow (for Sanitary Sewer Mains only) - The Contractor shall bypass the sanitary sewerage around the sections of sewer to be lined. The bypass shall be made by plugging an existing upstream manhole and if necessary pumping the sewerage into the downstream manhole or adjacent system. The pump and bypass lines shall be of adequate capacity and size to handle the flow.

208.03.11 Resin Impregnation of CIPP Tube - The Contractor shall designate a location where the tube shall be impregnated or "wet out" with resin, using distribution rollers and a "single-source" vacuum to thoroughly saturate the tube's felt fiber prior to installation. The impregnated tube shall be free of pinholes, resin voids and other defects. If the cured-in-place-pipe is impregnated at the manufacturing plant, it shall be delivered to the job site in a refrigerated truck and remain refrigerated prior to the installation to prevent premature curing.

208.03.12 Inversion of CIPP Tube - The impregnated tube shall be water or air inverted through an existing manhole or other approved access until it has fully traversed the designated line length and the inversion face breaches the target manhole or termination point.

208.03.13 Thermocouples shall be placed at the top, and if possible, the bottom interface of both ends of the liner for monitoring the temperatures during the cure cycle.

208.03.14 CIPP Processing (Curing and Cool Down) - The cure cycle and cool down will be dictated with consideration of the actual field conditions and shall be per the manufacturer's recommendations. The curing temperatures shall be monitored at the boiler truck's water inlet and outlet lines. The temperature reading from the

truck shall be compared to the thermocouples to ensure that sufficient heat is being supplied to the system.

208.03.15 Once the pipe has reached exotherm, cool water or air shall be slowly introduced into the rehabilitated pipe. The temperature shall be cooled inside of the pipe to below 100 degrees F. The cool down process will also be affected by actual field conditions, and may have to be modified in cases of severe weather conditions or below normal ground temperatures.

208.03.16 Termination and Sealing at Manhole Outlets - Termination of the cured-in-place-pipe at the manhole is completed by trimming the inverted pipe end back within approximately 2 inches of the outlet. The liner shall seal the annular space and hydraulic cement shall be used to finish the liner invert connection.

208.03.17 Testing - Leakage testing shall be conducted prior to the reinstatement of laterals and shall be performed under the supervision of the Owner or his authorized representative. The Contractor shall furnish all equipment and personnel necessary to conduct an acceptance test.

208.03.18 Internal Reconnection of Laterals - Lateral connections shall be reinstated robotically whereby a camera and robotic cutter are put into the newly rehabilitated line. Each lateral is identified by a dimple in the cured-in-place pipe and/or through pre-installation measurements. Initially, each lateral shall be relieved by cutting a 2 to 3 inch diameter hole to ensure that no services will be interrupted and there will be no risk of backed up lines. Once this is accomplished, each lateral shall be fully reopened to at least 90% percent of its original size.

208.03.19 Final Inspection - Upon completion of installation, sewers shall be CCTV inspected, providing both a video recording (DVD) and distance log which identifies all service connections and openings.

208.04 - MEASUREMENT

A. Cleaning of sewers and drains shall be absorbed in unit cost of the CIPP installation and will not be a separate pay item.
B. Removal of Protruding Taps will be measured per each.
C. No separate measurement will be made for reverse setups. Reverse setups will be considered an absorbed item.
D. Uncovering and gaining access to any buried manholes, catch basins, and inlets shall be an absorbed cost.
E. No separate measurement will be made for the NASSCO Defect Report and exhibits. They shall be considered an absorbed item.

F. Reconnection of laterals shall be made per each.
G. Bypass pumping is not a separate pay item. Cost to be an absorbed item.
H. CIPP will be measured per linear foot for each diameter pipe through which it is installed. CIPP of complete reaches (manhole to manhole, inlet to inlet, catch basin to catch basin, etc.) shall be measured from center to center.

208.05 - PAYMENT

Basis of Payment. This work will be paid for at the contract unit prices per unit specified, complete in place, which shall be full compensation for completing the work. Materials or work for which a pay item is not included and are necessary to complete the work under this section shall be furnished or performed and shall be considered incidental to the completed construction.

Payment will be made under:

907-208-A:	___" Cured-In-Place-Pipe	-per linear foot
907-208-B:	Remove Protruding Tap	-each
907-208-C:	Reconnection of Lateral	-each

CITY OF BILOXI

SPECIAL PROVISION NO. 907-213-1 **CODE: (SP)**

DATE: 06/14/2017

SECTION - FERTILIZING

Subsection 213.03 - Construction Requirements

Delete the first sentence of the second paragraph of Subsection 213.03 and insert the following sentence:

> The rate of application of each fertilizer to be applied shall be one thousand pounds (1,000 lbs.) per acre.

Subsection 213.04 - Method of Measurement

Delete the first sentence of Subsection 213.04 and insert the following sentence:

> Fertilizer applied as ordered in accepted work will be measured per square yard.

Subsection 213.05 - Basis of Payment

Delete the first sentence of the second paragraph of Subsection 213.05 and insert the following sentences:

> Types of fertilizer (combination and manufactured) specified to be placed prior to or during planting will be paid for at the contract unit price per square yard.
>
> If any other pay item includes payment for fertilizer then no separate payment shall be made under this section.

Following the phrase "Payment will be made under" add the following pay item number:

907-213-E: Combination Fertilizer (13-13-13) -per square yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-216-1 **CODE: (SP)**

DATE: 06/14/2017

SECTION 216 – SOLID SODDING

Subsection 216.02 – Materials

Replace the first sentence of the first paragraph of Subsection 216.02 with the following sentences:

> Unless otherwise specified, solid sod shall match the kind of undisturbed adjoining or adjacent grass. Whenever the kind of existing grass changes, the kind of sod shall change to match. The sod shall be live, fresh, growing grass (unless in the dormant season) with at least one and one-half inches of soil adhering firmly to the roots when placed.

Subsection 216.03.4 – Planting Sod

After the last paragraph of Subsection 216.03.4 insert the following paragraph:

> The Contractor shall install sod matching the existing kind of undisturbed adjoining grass. Whenever the kind of existing grass changes, the kind of sod shall change to match.

Subsection 216.04 - Method of Measurement

Delete the third paragraph of Subsection 216.04 and insert the following:

> Water will not be measured for separate payment. Its cost shall be absorbed in the unit price bid for solid sodding.

Subsection 216.05 – Basis of Payment

After the first paragraph of Subsection 216.05 insert the following paragraph:

> No separate payment will be made for the various kinds of sod. The Contractor shall take the various kinds of sod into account when submitting one (1) unit price per square yard for the sod.

Delete Pay Item 216-B: Solid Sodding, <u>Kind</u> - per square yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-225-1 **CODE: (SP)**

DATE: 06/5/2017

SECTION 225 - GRASSING

Subsection 225.03.2 - Fertilizing

Delete the second paragraph in toto and insert the following:

> Unless otherwise specified in the contract, the Contractor shall incorporate bag fertilizer at a rate of (21) pounds per (100) Square Yards of 13-13-13 commercial fertilizer. Fertilization shall be applied uniformly on the areas to be planted or seeded and uniformly incorporated into the soil.

Subsection 225.03.3 - Seeding

Delete the third paragraph in toto and insert the following:

The required type of seeds, minimum rates of application and planting dates of seeds shall be as follows:

> Grass seed planted between September 1 and February 29 shall be half (50%) Rye Grass (Lolium multiflorum, minimum 88% by weight of pure Live seed, maximum .5% by weight weed seed) and half (50%) Bermuda Grass (Cynodon dactlyon 9Hulled), minimum 82% by weight of pure live Seed, maximum 1% by weight weed seed.
>
> Grass seed planted between March 1 and August 31 shall be Bermuda Grass (Cynodon dactlyon (Hulled), minimum 82% by weight of pure live Seed, maximum 1% by weight weed seed. Seed shall be labeled in accordance With latest U. S. Department of Agriculture Rules and Regulations under Federal Seed Act.

Grass seed shall be applied at a rate of one (1) pound per hundred (100) square yards.

Subsection 225.03.3.2 – Hydroseeding Application

Add the following paragraph at the end of this subsection:

Hydroseeding may be an acceptable alternative to planting seeds in areas that are suited for its use, such as wide open easements, ditches, etc. Typically, the use of hydroseeding along road rights-of-way will not be permitted. The use of hydroseeding must be reviewed and approved by the City Engineer or his authorized representative prior to placement. All approved hydroseeding shall placed, installed and established in accordance with Section 227 – Hydroseeding. Approved hydroseeding shall be measured and paid for under the Pay Item 227-A: Hydroseeding - per square yard.

Add the following Subsection after Subsection 225.03.4.2:

225.03.4.3 - Protection and Maintenance. The Contractor should maintain and protect mulched areas until release of maintenance of the project. The Contractor should take every precaution to prevent unnecessary foot and vehicular traffic.

The Contractor should mow, remove or destroy any undesirable growth on all areas mulched as soon as any undesirable growth appears. This will prevent competition with the desired plants and to prevent reseeding of undesirable growth.

Subsection 225.04 - Method of Measurement.

In the first sentence of the first paragraph change “acre” to “square yard”.

Subsection 225.05 - Basis of Payment.

In the first sentence of the first paragraph change “acre” to “square yard”.

In the “Payment will be made under” section change the payment unit for grassing from “acre” to “square yard”.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-226-1 **CODE: (SP)**

DATE: 06/15/2017

SECTION 226 – TEMPORARY GRASSING

Subsection 226.04 - Method of Measurement.

In the first sentence of the first paragraph change “acre” to “square yard”.

Subsection 226.05 - Basis of Payment.

In the first sentence of the first paragraph change “acre” to “square yard”.

In the “Payment will be made under” section change the payment unit for grassing from “acre” to “square yard”.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-236-1 **CODE: (SP)**

DATE: 06/15/2017

SECTION 236 – TEMPORARY SILT BASINS

Subsection 236.04 – Method of Measurement

Delete the entire Subsection 236.04 and insert the following paragraph:

> Silt basins complete, in place and accepted, shall be measured as a percentage of the original contract completed at the time of the pay request and will be applied to the lump sum price bid for temporary silt basins.

Subsection 236.05 – Basis of Payment

Delete the entire Subsection 236.05 and insert the following paragraphs:

> Silt basin will be paid for at the contract lump sum price which shall be full compensation for construction, maintenance, removal, grassing and any other work required to make the basin function properly.
>
> Payment will be made under:
>
> 907-236-A: Temporary Silt Basin (_____) - per LS
> Type

CITY OF BILOXI

SPECIAL PROVISION NO. 907-304-1 **CODE: (SP)**

DATE: 06/15/2017

SECTION 304 - GRANULAR COURSES

Subsection 304.02.1 – General

Delete the second and third paragraphs of Subsection 304.02.1.

Subsection 304.02.3 – Stabilizer Aggregate

After the last paragraph of Subsection 304.02.2 add the following subsections:

Subsection 304.02.3 – <u>Stabilizer Aggregate</u>. Stabilizer aggregates of the kind and size specified shall meet the requirements of 703.20.

Size II stabilizer aggregate (gravel) shall be used under and around utility structures and as pipe bedding as directed by the City Engineer or his authorized representative.

Subsection 304.02.4 - <u>"610" Limestone.</u> Limestone shall be used as a road base or subbase as indicated on the plans and specifications. Crushed concrete or Calica shall not be used as a substitute for "610" Limestone. Limestone shall meet the following gradation:

PERCENT PASSING (BY WEIGHT)

Square Mesh Sieves	Specification
1 ½"	100
1"	90-100
¾"	70-95
½"	--------
3/8"	50-80
#4	35-65
#10	25-50
#60	10-26
#200	4-12

Subsection 304.03.5 - Shaping, Compacting, and Finishing

Delete the eighth and ninth paragraphs and their associated tables and insert the following paragraph:

The lot will be divided into five approximately equal sublots with one density test taken at random in each sublot. The individual tests shall equal or exceed 95% density in accordance with ASTM D 1557.

Subsection 304.04 – Method of Measurement

Add the following paragraphs after the final paragraph of Subsection 304.04:

Accepted quantities of stabilizer aggregate and "610" limestone will be measured by volume by the cubic yard (FM) as designated in the bid schedule of the contract.

Stabilizer aggregate (gravel) for pipe bedding shall be computed as follows; horizontally one foot each side of the pipe, vertically six inches below the pipe plus one-half the nominal size of the pipe. This area times the linear feet of pipe shall be used for determining the volume. Bedding under drainage structures and sewer manholes shall be measured by volume including one foot around the base and six inches thick. Aggregate outside these limits shall not be measured for payment. Area of the structure or pipe being bedded shall not be included in the calculation for bedding quantity.

Stabilizer aggregate (gravel) for filter material shall be computed from the lines and grades shown on the plans. The volume of the pipe displacement shall be deducted from the quantity calculations for filter material.

"610" limestone shall be computed from the dimensions on the typical section and the established lines and grades, within the tolerances allowable under Section 907-321.

If the Contractor elects to use "610" limestone to maintain the flow of traffic during construction it will not be measured for separate payment.

Subsection 304.05 – Basis of Payment

Under the heading "Payment will be made under" delete pay items 304-F, 304-G, and 304H. And add at the end of the other pay items, the following pay item numbers:

907-304-I:	Size II Stabilizer Aggregate (Gravel)(FM)	- per cubic yard
907-304-J:	"610" Limestone (FM)	- per cubic yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-307-1 **CODE: (SP)**

DATE: 06/15/2017

SECTION 307 – LIME TREATED COURSES

Subsection 307.02.5 - Density

Delete the last three sentences of Subsection 307.02.5 insert the following:

> The design of the soil-lime courses shall be performed by the Contractor utilizing a MDOT Certified Geotechnical Laboratory to meet the CBR (California Bearing Ratio) requirement shown on the plans with the Contractor bearing all the costs thereof.

Subsection 307.03.7 – Finishing, Curing, Protection, and Maintaining.

In the last sentence of the sixth paragraph, change "Central Laboratory" to "MDOT Certified Geotechnical Laboratory".

CITY OF BILOXI

SPECIAL PROVISION NO. 907-308-1 **CODE: (SP)**

DATE: 06/15/2017

SECTION 308 – CEMENT TREATED COURSES

Subsection 308.02.5 – Soil-Cement Design

Delete the first and only sentence of Subsection 308.02.5 insert the following:

> The design of the soil-lime courses shall be performed by the Contractor utilizing a MDOT Certified Geotechnical Laboratory to meet the CBR (California Bearing Ratio) requirement shown on the plans with the Contractor bearing all the costs thereof.

Subsection 308.03.7 – Finishing, Curing, Protection, and Maintaining.

In the last sentence of the sixth paragraph, change "Central Laboratory" to "MDOT Certified Geotechnical Laboratory".

Subsection 308.03.10 – Protection and Curing.

In the first sentence of the third paragraph, change "Central Laboratory" to "MDOT Certified Geotechnical Laboratory".

CITY OF BILOXI

SPECIAL PROVISION NO. 907-311-1 **CODE: (SP)**

DATE: 06/15/2017

SECTION 311 – LIME-FLY ASH TREATED COURSES

Delete Section 311 – Lime-Fly Ash Treated Courses in its entirety.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-321-1 **CODE: (SP)**

DATE: 06/15/2017

SECTION 321 - IN-GRADE PREPARATION

Subsection 321.03.6 - Density

Delete Subsection 321.03.6 in its entirety and insert the following paragraph:

> The required density for in-grade preparation of all courses shall equal or exceed 95% density in accordance with ASTM D 1557.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-403-1

DATE: 06/26/2017

SECTION 403: ASPHALT PAVEMENTS

907-403.03.2 – Smoothness Tolerances.

Delete the final three paragraphs of this subsection.

907-403.03.2.1 – Smoothness Tolerances for Mean Roughness Index (MRI).

Delete the last sentence of the eleventh paragraph, "No unit price adjustment will be applied on any underlying lift."

After the eleventh paragraph, delete the remaining paragraphs associated with this subsection and add the following paragraph:

For Category A and B projects, when the long continuous interval MRI exceeds 20 inches per mile more than that allowed for the particular type project, the surface lift shall be removed and replaced. For Category C projects, when the long continuous interval MRI for the final surface does not show more than a 30% improvement over the existing surface profile and has a final surface MRI greater than 100 inches per mile, the surface lift shall be removed and replaced.

907-403.05 – Basis of Payment.

In the first sentence of the first paragraph, delete reference to 403.03.2.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-410-1 **CODE: (SP)**

DATE: 01/03/2020

SECTION 410: BITUMINOUS SURFACE TREATMENT

907-410.04 – Method of Measurement.

Add the following paragraph after the third paragraph:

When the chip seal pay item is designated in the proposal, it shall include both the aggregate cover material and the asphalt for surface treatment.

When a cape seal pay item is designated in the proposal, it shall include a chip seal with an ultra-thin overlay.

907-410.05 – Basis of Payment.

Add the following pay item:

907-410-C:	Chip Seal	-per square yard
907-410-D:	Cape Seal	-per square yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-411-1 **CODE: (SP)**

DATE: 01/03/2020

SECTION 411: ULTRA-THIN ASPHALT PAVEMENT

907-411.05 – Basis of Payment.

Add the following pay item:

411-B:	Ultra-Thin Asphalt Pavement	-per square yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-413-1 **CODE: (SP)**

DATE: 01/03/2020

SECTION 413: SEALING AND FILLING JOINTS AND CRACKS

907-413.04 – Method of Measurement.

Add the following paragraph after the fourth paragraph:

When crack sealing is done in conjunction with a fog seal, crack sealing shall be absorbed in the cost of the fog sealing.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-424-1 **CODE: (IS)**

DATE: 01/24/2020

SECTION 907-424-1: REJUVENATING FOG SEAL

907-424-01 – Description. A Rejuvenating Fog Seal is a light application of an asphalt emulsion containing a rejuvenating agent used to extend the service life of a flexible pavement structure. A Rejuvenating Fog Seal is recommended on pavement in relatively good condition to prevent or correct distresses such as raveling, oxidation and minor top-down cracking.

907-424.02 - Materials.

907-424.02.1 Asphalt Emulsion. The asphalt emulsion shall contain asphalt, water, polymer and a rejuvenating agent and shall not be diluted prior to application.

Asphalt emulsion delivered to the project shall be accompanied by a laboratory certification of analysis. The asphalt emulsion shall be designated CMS-1PF as manufacturer by Ergon Asphalt & Emulsions, Inc. or approved equal.

907-424.02.2 Recycling Agent. The manufacturer of the rejuvenating agent, through the emulsion supplier and the contractor, shall submit to the agency test results certifying that the material meets the specification listed in this document. The agency shall not accept test results dated more than 120 days from the date of the project start. At any time during the project, the City may obtain, and have tested at the City's expense, samples of the recycling agent being used in manufacturing of emulsion delivered to the project.

907-424.02.3 Latex Polymer. The manufacturer of the latex polymer, through the emulsion supplier and the contractor, shall submit to the City test results certifying that the material meets the specification listed in this document. The City shall not accept test results dated more than 120 days from the date of the project start. At any time during the project, the City may obtain, and have tested at the City's expense, samples of the latex polymer being used in manufacturing of emulsion delivered to the project.

907-424.02.4 Aggregate. Aggregate is used only as a blotting agent in areas of excess emulsion application or as a means to protect a freshly placed seal in high traffic areas or to facilitate early return to traffic.

The aggregate shall be any suitable manufactured or natural sand with top sized material of less than one-quarter inch.

907-424.03 Equipment.

907-424.03.1 Asphalt Distributor. The distributor shall be self-powered and capable of providing a uniform application rate of asphalt binder varying from 0.05-1.00 gal/yd^2 over a variable width up to 16 feet in a single pass. Nozzles on the distributor bar shall be fully operational and of the size suggested by the manufacturer to apply the intended application rate. Coverage shall be full with no overlapping areas or bare spots. Multiple passes shall overlap by a maximum of 4 inches, with the end nozzles applying 50% of the desired application rate of each pass. The distributor shall be self-powered and include computerized application controls and be capable of heating material to 160°F.

907-424.03.2 Broom. Self-propelled, four-wheeled rotary mechanical brooms and/or vacuum brooms capable of operating in both forward and reverse are recommended. Brooms should be in good condition and meet applicable environmental standards.

907-424.04 Equipment Calibration.

907-424.04.1 Asphalt Distributor. The distributor shall be calibrated by applying asphalt emulsion for a minimum 300-foot continuous section. The amount of material distributed shall be within 5% of the intended application rate and shall be verified by use of the strapping stick as supplied by the equipment manufacturer. Neither a visual gauge indicating volume nor the computer readout shall be used as a calibration
method. Application rate is measured in gal/yd^2.

907-424.05 Test Strip. Prior to the beginning of the project, the contractor may be required to perform a test strip in a suitable area such as a parking lot or staging area to assure the materials, contractor personnel and equipment are suitable to produce a satisfactory Rejuvenating Fog Seal. The location for the test strip shall be approved by the owner. The test strip may be conducted as part of the calibration procedure and may be conducted as part of the project.

907-424.06 Weather. The Rejuvenating Fog Seal shall not be placed when rain is possible prior to curing of the product or when freezing conditions are expected within 24 hours of application. Both ambient temperature and roadway surface temperature shall be minimum 50°F and rising before beginning application.

907-424.07 Traffic Control. Prior to start of the project, a traffic control plan shall be developed to address all aspects of traffic control, including without limitation, coordination with local officials and traffic control equipment and methods. The traffic control plan is intended to promote controlled traffic flow through the project in order to protect the safety of the contractor and owner personnel, the public, and the product. The traffic control plan shall remain in place until the product has sufficiently cured to withstand traffic without damage. Any damage to the newly applied Rejuvenating Fog Seal due to the premature release of traffic shall be repaired to the satisfaction of the owner at the contractor's expense.

907-424.08 Surface Preparation.

907-424.08.1 General. Immediately prior to applying the Rejuvenating Fog Seal, the pavement surface shall be cleared of all loose material, silt spots, vegetation and other objectionable material. If water is used, cracks shall be allowed to dry thoroughly before applying the Rejuvenating Fog Seal. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the Rejuvenating Fog Seal by a suitable method. Thermoplastic and other striping should be removed or protected prior to application of the Rejuvenating Fog Seal. The owner shall approve the surface preparation prior to application of the Rejuvenating Fog Seal.

907-424-08.2 Cracks. Cracks wider than 0.25 inches should be treated with an approved crack sealer after application of the Rejuvenating Fog Seal.

907-424-08.3 Patching. Prior to application, all failed pavement sections should be removed and patched using accepted best practices. The perimeter of excavated areas should be milled or saw cut to form a neat vertical face. Unstable areas of sub-grade should be back filled with well-graded and compacted aggregate. Patching should be completed 30 days prior to application of the Rejuvenating Fog Seal. Patches may require an individual application of asphalt emulsion prior to the full width application. Extensive, large areas or shallow patches should be considered for suitability prior to application of Rejuvenating Fog Seal, as the rejuvenator can soften some mixes.

907-424.08.4 Application. The asphalt emulsion shall be applied by means of a pressure distributor. Application shall be a uniform, continuous, full coverage spread and under such pressure as to thoroughly coat the surface at the specified rate. The temperature of the asphalt emulsion during application shall be maintained between 100°F-160°F.

907-424.08.5 Material Storage and Handling.

907-424.08.6 Asphalt Emulsion. Asphalt emulsion stored on the jobsite must be agitated and heated using the distributor prior to use. Stored emulsion shall be inspected by the contractor for suitability prior to use on the project. The contractor shall comply with all material handling, storage, and safety requirements outlined in any applicable MSDS or other product label.

907-424.08.7 Aggregate. Aggregate intended for use on the project shall be maintained in such manner as to protect it from contamination by debris and excess moisture. Large or oversized particles shall be removed from the aggregate by screening or other acceptable method prior to use on the project.

907-424.08.8 Inspection. Assure all distributor operations are functional. The nozzles shall be clean and producing a consistent fan of material providing full and complete coverage of material across the asphalt surface with no overlap or excessive material. Assure material is within required

temperature range and the material is sufficiently cured prior to return of traffic. Assure traffic control measures are in place and are adequate to satisfy all safety and product requirements.

907-424.09 Method of Measurement. The Rejuvenating Fog Seal shall be measured in square yards of pavement covered.

907-424.10 Basis of Payment. Payment shall be in consideration of all materials, tools, labor and other items as Rejuvenating Fog Seal shall be paid at either of the methods below as set forth in the bid documents:

907-424-A	Rejuvenating Fog Seal	-Square Yards

CITY OF BILOXI

SPECIAL PROVISION NO. 907-425-1 **CODE: (IS)**

DATE: 02/04/2020

SECTION 907-425-1: HIGH PERFORMANCE FOG SEAL

907-425-01 – Description. A High Performance Fog Seal is a light application of a diluted asphalt emulsion used to extend the service life of a flexible pavement structure. A High Performance Fog Seal is recommended on pavement in relatively good condition to prevent or correct distresses such as raveling, oxidation and minor top-down cracking.

907-425.02 - Materials.

907-425.02.1 Asphalt Emulsion. Asphalt emulsion delivered to the project shall be accompanied by a laboratory certification of analysis. The asphalt emulsion shall be designated CHPF-1 or CF-1H as manufacturer by Ergon Asphalt & Emulsions, Inc. or approved equal.

907-425.02.2 - Aggregate. Aggregate is used only as a blotting agent in areas of excess emulsion application or as a means to protect a freshly placed seal in high traffic areas or to facilitate early return to traffic. The aggregate shall be any suitable manufactured or natural sand with top-sized material of less than 0.25 inch.

907-425.03 Equipment.

907-425.03.1 Asphalt Distributor. The distributor shall be self-powered and capable of providing a uniform application rate of asphalt binder varying from 0.05-1.00 gal/yd^2 over a variable width up to 16 feet in a single pass. Nozzles on the distributor bar shall be fully operational and of the size suggested by the manufacturer to apply the intended application rate. Coverage shall be full with no overlapping areas or bare spots. Multiple passes shall overlap by a maximum of 4 inches, with the end nozzles applying 50% of the desired application rate of each pass. The distributor shall be self-powered and include computerized application controls and be capable of heating material to 160°F.

907-425.03.2 Broom. Self-propelled, four-wheeled rotary mechanical brooms and/or vacuum brooms capable of operating in both forward and reverse are recommended. Brooms should be in good condition and meet applicable environmental standards.

907-425.04 Equipment Calibration.

907-425.04.1 Asphalt Distributor. The distributor shall be calibrated by applying asphalt emulsion for a minimum 300-foot continuous section. The amount of material distributed shall be within 5% of the intended application rate and shall be verified by use of the strapping stick as

supplied by the equipment manufacturer. Neither a visual gauge indicating volume nor the computer readout shall be used as a calibration method. Application rate is measured in gal/yd^2.

907-425.05 Test Strip. Prior to the beginning of the project, the contractor may be required to perform a test strip in a suitable area such as a parking lot or staging area to assure the materials, contractor personnel and equipment are suitable to produce a satisfactory Rejuvenating Fog Seal. The location for the test strip shall be approved by the owner. The test strip may be conducted as part of the calibration procedure and may be conducted as part of the project.

907-425.06 Weather. The High Performance Fog Seal shall not be placed when rain is possible prior to curing of the product or when freezing conditions are expected within 24 hours of application. Both ambient temperature and roadway surface temperature shall be minimum 50°F and rising before beginning application.

907-425.07 Traffic Control. Prior to start of the project, a traffic control plan shall be developed to address all aspects of traffic control, including without limitation, coordination with local officials and traffic control equipment and methods. The traffic control plan is intended to promote controlled traffic flow through the project in order to protect the safety of the contractor and owner personnel, the public, and the product. The traffic control plan shall remain in place until the product has sufficiently cured to withstand traffic without damage. Any damage to the newly applied High Performance Fog Seal due to the premature release of traffic shall be repaired to the satisfaction of the owner at the contractor's expense.

907-425.08 Surface Preparation.

907-424.08.1 General. Immediately prior to applying the High Performance Fog Seal, the pavement surface shall be cleared of all loose material, silt spots, vegetation and other objectionable material. If water is used, cracks shall be allowed to dry thoroughly before applying the High Performance Fog Seal. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the High Performance Fog Seal by a suitable method. Thermoplastic and other striping should be removed or protected prior to application of the High Performance Fog Seal. The owner shall approve the surface preparation prior to application of the High Performance Fog Seal.

907-425-08.2 Cracks. Cracks wider than 0.25 inches should be treated with an approved crack sealer after application of the Rejuvenating Fog Seal.

907-425-08.3 Patching. Prior to application, all failed pavement sections should be removed and patched using accepted best practices. The perimeter of excavated areas should be milled or saw cut to form a neat vertical face. Unstable areas of sub-grade should be back filled with well-graded and compacted aggregate. Patching should be completed 30 days prior to application of the High

Performance Fog Seal. Patches may require an individual application of asphalt emulsion prior to the full width application.

907-425.08.4 Application. The asphalt emulsion shall be applied by means of a pressure distributor. Application shall be a uniform, continuous, full coverage spread and under such pressure as to thoroughly coat the surface at the specified rate. The temperature of the asphalt emulsion during application shall be maintained between 100°F-160°F.

907-425.08.5 Material Storage and Handling.

907-425.08.6 Asphalt Emulsion. Asphalt emulsion stored on the job site must be agitated and heated using the distributor prior to use. Stored emulsion shall be inspected by the contractor for suitability prior to use on the project. Diluted asphalt emulsion shall not be stored over five days. Contractor shall comply with all material handling, storage and safety requirements outlined in any applicable MSDS or other product label. The temperature of the asphalt emulsion during storage shall be maintained between 50 - 185° F.

907-425.08.7 Aggregate. Aggregate intended for use on the project shall be maintained in such manner as to protect it from contamination by debris and excess moisture. Large or oversized particles shall be removed from the aggregate by screening or other acceptable method prior to use on the project.

907-425.08.8 Inspection. Assure all distributor operations are functional. The nozzles shall be clean and producing a consistent fan of material providing full and complete coverage of material across the asphalt surface with no overlap or excessive material. Assure material is within required temperature range and the material is sufficiently cured prior to return of traffic. Assure traffic control measures are in place and are adequate to satisfy all safety and product requirements.

907-425.09 Method of Measurement. The High Performance Fog Seal shall be measured in square yards of pavement covered.

907-425.10 Basis of Payment. Payment shall be in consideration of all materials, tools, labor and other items as High Performance Fog Seal shall be paid at either of the methods below as set forth in the bid documents:

907-425-A	High Performance Fog Seal	-Square Yards
907-425-B	High Performance Fog Seal & Crack Seal	-Square Yards

CITY OF BILOXI

SPECIAL PROVISION NO. 907-501-1 **CODE: (IS)**

DATE: 06/26/2017

SECTION 501: CONCRETE PAVEMENTS

907-501.03.19 – Surface Test.

Delete the first sentence of paragraph eleven and replace with the following:

> Corrections shall be made using an approved profiling device. In the event the MRI exceeds that allowed for the Category of project by 20 inches per mile, the segment in question shall be removed and replaced.

907-501.05.3 – Price Adjustments for Smoothness.

Delete this subsection in toto.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-603-1 **CODE: (SP)**

DATE: 06/26/2017

SECTION 603 - CULVERTS AND STORM DRAINS

Subsection 603.01- Description

Add the following sentence to the end of the first paragraph of Subsection 603.01:

> The work also includes, but is not limited to, clearing, grubbing, trenching, pipe laying, backfilling and testing/inspection required for installation of the culverts and storm drains.

Subsection 603.02 - Materials

Add the following material to the list contained in Subsection 603.02:

> Smooth Wall Corrugated High Density Polyethylene (HDPE) Pipe 708.17

After the last paragraph of Subsection 603.02 add the following paragraph:

> Corrugated Polyvinyl chloride (PVC) drain pipe shall be A-2000 as manufactured by Contech or approved equal. PVC pipe shall be corrugated outside with a smooth interior and shall conform to the requirements of ASTM Designation F949 (latest revision). Pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects. Pipe shall be manufactured to 46 pounds per square inch (PSI) stiffness when tested in accordance with ASTM Test Method D2412. There shall be no evidence of splitting, cracking or breaking when the pipe is tested per ASTM Test Method D2412 at 60 percent flattening. The pipe shall be made of PVC compound having a minimum cell classification of 12454B as defined in ASTM Specification D1784. All fittings for PVC corrugated sewer pipe with a smooth interior shall conform to ASTM F949, Section 5.2.3. To insure compatibility, the pipe manufacturer shall provide all fittings. All joints shall be made with integrally-formed bell and spigot gasketed connections. The manufacturer shall provide documentation showing no leakage when gasketed pipe joints are tested in accordance with ASTM Test Method D3212. Elastomeric seals (gaskets) shall meet the requirements of ASTM Designation F477.
>
> Bedding shall be "Size II Stabilizer Aggregate" in accordance with Section 907-304-1, "Granular Courses" or "Borrow Excavation" in accordance with Section 203, Excavation and Embankment" as directed by the City Engineer or his authorized representative.

Geotextile fabric shall be non-woven, needle punched as manufactured by Terratex Construction Fabrics, "NO8", or approved equal. All geotextile fabric shall weigh a minimum of eight ounces (8 oz.) per square yard.

Concrete pipe shall be in accordance with the standards specified. In addition, concrete pipe shall **not** be accepted for any of the following reasons:

(a) If the pipe has been repaired in any way prior to being offloaded at the project site.
(b) If any portion of the reinforcing wire is exposed.
(c) If there is any visible cracking or breakage in the barrel of the pipe.
(d) If the "x" and "y" dimensions of any crack or breakage exceed the allowable dimensions as shown on the "Bell and Spigot Pipe Repair" detail.
(e) If cracking or breakage occurs in more than one (1) area for each end of the pipe.
(f) If the cracking or breakage is within the acceptable limits, but is not repaired in accordance with the repair procedures listed below.

All pipe repairs shall be repaired in accordance with the following procedure:

(a) The procedure for the pipe repair shall be submitted to the City Engineer or his authorized representative for approval prior to the repair.
(b) The pipe repair method and repair material shall be as recommended by the pipe manufacturer. The pipe manufacturer's recommendations concerning repair materials and methods shall be submitted in writing to the City Engineer or his authorized representative.
(c) The City Engineer or his authorized representative shall be present for all pipe repairs.

Subsection 603.03.1 - Excavation

Delete the first paragraph of Subsection 603.03.1 and insert the following:

Except for conduit to be installed by jacking and boring, trenches shall be excavated to a width sufficient to allow for proper jointing of the conduit and thorough compaction of the bedding and backfill material under and around the conduit. Where feasible, trench walls shall be vertical.

Trenches shall be dug so that the existing pipe can be removed and the new pipe can be laid to the alignment and depth required, and shall be excavated only so far in advance of pipe removal and laying as to reveal obstructions. The trench shall be so braced and drained that workmen may work therein safely and efficiently. Discharge from dewatering pumps shall be conducted to natural drainage channels,

drains or storm drains. No water shall be discharged in the sanitary sewer system. Bell holes shall be excavated at each joint to permit the proper joining of pipe sections.

The width of the trench shall be ample to permit the existing pipe to be removed and the new pipe to be laid and jointed properly and the backfill to be placed and compacted as specified. The trench shall be excavated to the depth required so as to remove the existing pipe and to provide a uniform and continuous bearing and support for the pipe on solid and undisturbed ground at every point between bell holes.

Where trench conditions are such that adequate support for the pipe cannot be obtained on the native material, aggregate bedding shall be used only with the approval of the City Engineer or his authorized representative.

No greater length of trench shall be opened in advance of a completed pipeline nor left unfilled to the rear than shall seem proper to the City Engineer or his authorized representative. No trench shall be left without being backfilled at the end of a workday.

Subsection 603.03.2 - Bedding

Delete Subsection 603.03.2 in its entirety and insert the following:

Bedding shall be installed at the direction of the Engineer or his authorized representative. When directed, the bedding material shall be installed in accordance with the Details and as directed by the City Engineer or his authorized representative.

Subsection 603.03.3 – Laying Conduit

Add the following paragraph after the last paragraph of Subsection 603.03.3:

Corrugated PVC pipe shall be installed in accordance with ASTM D 2321, Standard Practice for Underground Installation of Thermoplastic Pipe. Pipe shall be installed true to line and grade, and free from cracks or defects. The interior of the pipe shall be free from all dirt, excess water, and other foreign materials as the pipe laying progresses, and left clean at the completion of the installation. The pipe shall be laid with the groove or bell upstream.

Subsection 603.03.4.1 - Storm Drainage

Delete the first paragraph of Subsection 603.03.4.1 and insert the following:

Rigid conduits shall be bell and spigot design. The method of joining conduit sections shall be such that the ends are fully entered, and the inner surfaces are reasonably flush and even. Joints shall be sealed with rubber type gaskets. Lift holes in concrete pipe will not be permitted.

Delete the fifth, sixth, and seventh paragraphs.

After the last paragraph of Subsection 603.03.4.1 add the following paragraph:

Coupling bands for joining corrugated polyethylene pipe shall be in accordance with AASHTO Designation: M 294 and shall meet or exceed the soil tightness requirements of the AASHTO Standard Specifications for Highway Bridges, Section 23, paragraph 23.3.1.5.4 (e).

Joints for corrugated PVC pipe shall be constructed so that they are watertight. The "tongue and groove" or band shall be clean and washed with water, if necessary, before the joints are made.

All storm drain pipe joints shall be wrapped with geotextile fabric in accordance with the standard details.

Subsection 603.03.7 - Backfilling

Add the following paragraphs after the last paragraph of Subsection 603.03.7:

All backfill shall be compacted in 6 to 8 inch lifts to 95% density in accordance with ASTM D 1557, unless approved otherwise by the City Engineer or his authorized representative in non-paved areas. The Contractor shall take random density tests in the trench lines and around all four sides of all structures to assure that proper compaction has been achieved.

Existing/native material shall be utilized as backfill wherever possible. In the event that existing material is unsuitable for backfill, borrow material may be used. This borrow material must be from a pre-approved source. The placement of borrow material must be approved by the City Engineer or his authorized representative. The excavation and disposal of unsuitable material shall be measured and paid for as Excess Excavation.

After Subsection 603.03.9.3 add the following subsection:

Subsection 603.03.10 - Sheathing and Shoring. The Contractor shall place such sheathing and shoring in the trenches or utilize a trench box as may be necessary to properly support the trench walls and any adjacent structures. The type and amount of sheathing and shoring shall be such as the nature of the ground and attendant

condition may require. It shall be the sole responsibility of the Contractor to provide such sheathing, shoring and bracing as may be required for the safe conduct of the work. The City Engineer or his authorized representative may, however, order the placement of sheathing, shoring or bracing if, in his opinion, it is required to properly execute the work in accordance with these specifications. No additional compensation will be allowed for this operation.

No actions or instructions by the City Engineer or his authorized representative shall be regarded as his responsibility for the security of the trench or protection of workmen. The full responsibility shall remain with the Contractor.

Subsection 603.03.11 - Dewatering. The Contractor shall keep all excavations free from water at his own expense while pipe laying is in progress and to such extent as may be necessary while excavation work alone is being carried on. He shall provide for the disposal of the water removed from excavations in such manner as shall not cause injury to the public health, to public or private property, or to any portion of the work completed or in progress, or any impediment to the use of the streets by the public. No water shall be discharged into the sanitary sewer system.

Subsection 603.03.12 - Storm Drain Inspection. All new storm drain lines will be "lamped" between junction boxes, inlets, etc. The Contractor shall provide mirrors, adequate battery operated lights and other necessary equipment and personnel to make this inspection.

Upon completion of "lamping", the Contractor shall video all new round storm drain lines 42" and smaller and all new arch storm drain lines 65" x 40" and smaller installed on the project after a minimum of thirty (30) calendar days from installation. The Contractor shall give a copy of the video to the Engineer or his authorized representative for review and approval of the new storm drain lines prior to the installation of road subbase. The Contractor shall make arrangements for the Engineer or his authorized representative to be present to witness the "lamping" and the making of the video.

In the event that any imperfection in any of the new storm drain lines is discovered during the "lamping or review of the video, the Contractor shall correct the problem(s) immediately at his own expense. Once the Contractor believes the problem(s) has been corrected, the entire section(s) of pipe (i.e. drainage structure to drainage structure) containing the imperfection(s) shall be re-lamped and re-videoed following all the same requirements as imposed for the original testing. This procedure shall be repeated until the pipe segment(s) are approved for acceptance by the City Engineer or his authorized representative. All cost incurred for correcting problems and re-testing shall be the responsibility of the contractor.

Subsection 603.04 - Method of Measurement

Delete the last two paragraphs of subsection 603.04 and add the following paragraphs:

Excavation, clearing, grubbing, backfill (utilizing native material), compaction, geotextile fabric, and other related miscellaneous items will not be measured for separate payment. The cost thereof shall be included in the unit price bid for this item.

Aggregate for pipe bedding, if ordered by the City Engineer or his authorized representative, will be measured by volume in cubic yards in accordance with Section 907-304-1 or Section 203.

If existing/native material is used as backfill, there shall be no additional payment for excavation and backfill. If existing material is unsuitable for backfill, borrow material may be used. This borrow material must be from a pre-approved source. Approved placement of borrow will be measured by volume in cubic yards in accordance with Pay Item 907-203-EX. The excavation and disposal of the unsuitable material shall be paid for as Excess Excavation and measured by volume in cubic yards in accordance with Pay Item 203-G.

"Lamping" and making video of new storm drain lines shall not be measured for separate payment. The cost thereof shall be absorbed in the bid price per linear foot of new storm drain line.

Perforated pipe shall be measured and paid in accordance with Section 907-605-1, "Underdrains".

Subsection 603.05 - Basis of Payment

Following the phrase "Payment will be made under" add the following pay item numbers:

907-603-PE-A: ___" Smooth Wall Corrugated High Density Polyethylene (HDPE) Pipe -per linear foot

907-603-PE-B: ___" Smooth Wall Corrugated High Density Polyethylene (HDPE) Flared End Section -per linear foot

907-603-T-A: ___" Corrugated PVC Drain Pipe -per linear foot

CITY OF BILOXI

SPECIAL PROVISION NO. 907-604-1 **CODE: (SP)**

DATE: 06/27/2017

SECTION 604 - MANHOLES, INLETS AND CATCH BASINS

Subsection 604.02 - Materials

Add the following paragraphs after the last paragraph of Subsection 604.02:

Precast sanitary sewer manholes shall conform to the requirements of ASTM C478 and shall be cast with Kor-N-Seal I boot as manufactured by Fernco or an approved equal for connecting sanitary sewer pipes to manholes. After installation of the pipe, the pipe shall be grouted in place with a non-shrink grout by filling the inside of the boot with grout from inside the manhole.

Prior to installation, two coats of coal tar epoxy shall be applied to the inside of all precast sanitary sewer manhole sections, unless a 100% solids epoxy system is otherwise required. After installation coal tar epoxy shall be reapplied to areas where it has been chipped, marred, etc.

Sanitary sewer manholes shall be furnished with "Ram-Nek" or approved equal gaskets. All joints in the manholes shall be wrapped tightly with Infi-Shield External Gator Wrap or approved equal. The wrap shall be overlapped a minimum of six inches (6”). All sanitary sewer manholes shall be fitted with Infra-Riser (or approved equal) composite adjustment riser ring. The raising of any castings or gratings in manholes (sanitary sewer and drainage) or catch basins shall be accomplished by using either masonry or Infra-Riser (or approved equal) as required in Section 907-613.

Each section shall have not more than two holes for the purpose of handling. These holes shall be plugged with a non-shrink grout immediately after installation and covered with a minimum 9” x 9” patch of “Gator Wrap” or approved equal.

All sanitary sewer manholes that have a sanitary sewer force main entering it, or other manholes as directed by the City Engineer or his authorized representative, shall be lined with a 100% solids epoxy lining. After installation, the epoxy lining shall be reapplied to areas where it has been chipped, marred, etc. prior to final acceptance.

All of the cold joints on boxes, inlets, etc. that are poured in lifts shall be wrapped tightly with a three foot (3') band of geotextile filter fabric. Filter fabric shall be overlapped three feet (3’). The Contractor shall secure the filter fabric to the box, inlet, etc. to hold it in place throughout the backfilling operation.

Geotextile fabric shall be non-woven, needle punched, and weigh a minimum of eight ounces (8 oz.) per square yard, as manufactured by Terratex Construction Fabrics, "NO8", or approved equal.

All inlets and boxes deeper than three feet (3') will require reinforced copolymer polypropylene plastic steps at 12" O.C. conforming to ASTM C478. Reinforced copolymer polypropylene plastic steps shall be built into the walls of precast sanitary sewer manhole sections at 12" O.C. conforming to ASTM C478. Steps in all boxes, inlets and manholes shall be installed in a straight alignment so as to form a continuous ladder. Spacing from top of inlet, manhole, or box shall be no more than two feet (2') unless approved otherwise by City Engineer or his authorized representative.

Pre-cast storm drain structures shall not be used. All storm drain structures (e.g. inlets, catch basins, manholes, junction boxes, etc.) shall be cast-in-place.

100% Solids Epoxy Materials for rehabilitation of existing manholes, new manholes in which a force main will enter, or any other manhole to be coated (with the 100% Solids Epoxy) as directed by the City Engineer or his authorized representative, shall be in accordance with the Warren Environmental System P301/S301 (WES), COR-GARD® with ½" permacast MS-10,000 mortars, Strong Seal Epoxy Topcoat System, Strong Seal Urethane Coating System SprayWall Urethane (SprayROQ), or approved equal. Strong Seal QSR is approved for patching and MS-2-(A & C) is approved for rehab of structures in a non-corrosive environment only. The material sprayed onto the surface of the manhole shall be a 100% solids, low odor, amine cured epoxy.

"Size II Stabilizer Aggregate" for bedding shall be in accordance with Section 907-304-1, "Granular Courses".

Subsection 604.03.2 – Concrete Masonry

Add the following paragraph after the last paragraph in Subsection 604.03.2:

A precast concrete adjusting ring may be used on precast concrete manholes upon approval of the City Engineer or his authorized representative. The adjusting ring shall be set on a one-inch (1") mortar bed to connect the ring to the manhole. The connection shall be constructed to be smooth, neat, and watertight on the inside and the outside of the manhole.

Subsection 604.03.5 - Inlet and Outlet Pipes

Add the following paragraphs after the last paragraph in Subsection 604.03.5:

Concrete invert channels shall be poured in all manholes, boxes, inlets, etc. in the field by the Contractor and shall be smooth and accurately shaped to a semi-circular bottom conforming to the inside of the adjacent pipe section. Inverts shall extend up at least half of the diameter of the pipe. Changes in direction of flow of entering branches shall have a true curve of as large a radius as the size of the structure will permit. All flow shall be blocked off during the time that the invert is being worked on. No debris shall be allowed to enter the structure.

Inlet and outlet pipes shall be placed in existing structures by cutting through the walls and reshaping the inverts. The Contractor shall use a non-shrink grout to install a Fernco concrete manhole adapter around the pipes so as to prevent leakage and to refinish the part of the structure worked on.

Where the vertical distance from the flow line of the outgoing sewer to the invert of the incoming sewer in any sanitary sewer manhole exceeds two feet (2'), a drop pipe connection shall be built for the incoming sewers. Drop sizes will be as directed by the City Engineer or his authorized representative.

The Contractor shall stub an eighteen inch (18”) long piece of six inch (6”) diameter perforated SDR-26 pipe through the sidewall of all drainage structures as directed by the City Engineer or his authorized representative. The entire length of the perforated pipe stub-out shall be wrapped in eight ounce (8 oz.) geotextile fabric. The perforated pipe shall be installed in such a manner that silt is prevented from entering the open end of the stub-out and the perforations. The holes in the perforated pipe shall be one-half inch (1/2”) in diameter.

Subsection 604.03.6 – Castings, Gratings, and Fittings

Add the following paragraphs after the last paragraph in Subsection 604.03.6:

All castings shall meet AASHTO M306, latest revision.

Subsection 604.03.8 - Excavation and Backfill

Delete the last sentence of Subsection 604.03.8 and add the following paragraph:

All backfill placed around manholes, inlets, catch basins, junction boxes, conflict boxes, and any other structure shall be placed in 6 to 8 inch (6" to 8") lifts and compacted to 95% density in accordance with ASTM D 1557. The Contractor shall take density tests around all four (4) sides of all structures to assure proper compaction.

Insert the following subsection after subsection 604.03.9, "Cleaning Up":

604.03.10 – 100% Solids Epoxy Liner. 100% Solids Epoxy Liner system shall be applied to manholes as indicated on the drawings or in accordance with this specification and in accordance with the manufacturer's written instructions. Total final dry film thickness shall be 100-120 mils. Thinning will not be allowed.

The cured epoxy system shall conform to the minimum physical standards, as noted below:

Cured Epoxy	Standard	Long-Term Data
Tensile Strength	ASTM D 638	6300 psi
Flexural Strength	ASTM D 790	9000 psi
Abrasion Resistance	ASTM D 4060	95 mg
Pot Life	68 minutes @ 77°Fahrenheit	

Subsection 604.04 - Method of Measurement

After the last paragraph of Subsection 604.04, insert the following paragraphs:

"Size II Stabilizer Aggregate" for bedding shall be measured and paid in accordance with Section 907-304-1, "Granular Courses".

Backfill, filter fabric, "Gator Wrap", steps, concrete for drop manholes, grout, inverts, and coal tar epoxy liner will not be measured for separate payment. The cost thereof shall be absorbed in the unit prices bid for other items.

The perforated pipe stubbed out of all drainage structures, including geotextile fabric, will not be measured for separate payment. The cost thereof shall be absorbed in the unit price bid for other items.

Sanitary sewer manholes will be measured by the number of units as specified for depth intervals of zero to six foot (0-6'), six to eight foot (6-8'), eight to ten foot (8-10'), and progressing on two-foot intervals. The invert of the lowest inlet pipe to the finished grade at the top of the casting will determine the overall depth of the manhole. This measurement must exceed the higher end of the depth interval by seven inches (7") for the manhole to be counted in the next incremental depth category.

100% Solids Epoxy Liner System shall be measured by square feet for which the system is applied. The cost shall include any corrections or additions.

Subsection 604.05 - Basis of Payment

Add the following paragraphs after the second paragraph of Subsection 604.05:

Sanitary sewer manholes will be paid for at the contract unit price per each, complete in place. These prices shall be full compensation for completing the work specified.

100% Solids Epoxy Liner System will be paid for at the contract unit price of square feet complete in place. These prices shall be full compensation for completing the work specified.

Following the phrase "Payment will be made under" add the following pay item numbers:

907-604-C:	4' Dia. Precast Concrete Manhole (Depth)	- per each
907-604-D:	5' Dia. Precast Concrete Manhole (Depth)	- per each
907-604-E:	6’ Dia. Precast Concrete Manhole (Depth)	- per each
907-604-F:	100% Solids Epoxy Liner	-per square foot

CITY OF BILOXI

SPECIAL PROVISION NO. 907-605-1 **CODE: (SP)**

DATE: 06/27/2017

SECTION 605 - UNDERDRAINS

Delete all of the subsections of Section 605 in their entirety and insert the following:

605.01 - Description. The work under this section shall consist of furnishing all materials and constructing perforated pipe underdrains in accordance with these specifications and in reasonably close conformity with the lines and grades indicated on the plans or established by the Engineer.

605.02 - Materials.

605.02.1 – Perforated Corrugated PVC Drain Pipe. Perforated Corrugated Polyvinyl Chloride (PVC) drain pipe shall be as specified in Section 907-603-1, "Culverts and Storm Drains", except perforations shall be in accordance with the manufacturers standards for perforated pipe. Perforated pipe shall be produced by the same manufacturer and compatible with any non-perforated pipe that may adjoin the perforated pipe. Perforated pipe shall be manufactured as such. In no case shall non-perforated pipe be retrofitted to contain perforations. The perforation dimensions shall be in accordance with ASTM Designation F949. Minimum open area shall be as follows:

Nominal Pipe Diameter (in.)	Perforated Open Area Per Foot of Pipe (square inches)
15	2.00
18	2.00
21	4.00
24	4.00
30	5.00
36	5.00

605.02.2 - Geotextile Fabric. Geotextile fabric shall be as specified in Section 907-603-1, "Culverts and Storm Drains".

605.02.3 – Bedding Material. Bedding shall be "Size II Stabilizer Aggregate" in accordance with Section 907-304-1, "Granular Courses" or "Borrow Excavation" in accordance with Section 203, "Excavation and Embankment" as directed by the City Engineer or his authorized representative.

605.02.4 – Filter Material. Filter material shall be "Size II Stabilizer Aggregate" in accordance with Section 907-304-1, "Granular Courses".

605.03 - Construction Requirements.

605.03.1 – General. Perforated pipe shall be installed, inspected, and tested in accordance with the detail(s) on the plans and in accordance with Section 907-603-1, "Culverts and Storm Drains". Excavation for filter beds shall be made to the elevation and dimensions indicated on the plans. Filter materials shall be placed, thoroughly compacted, and shaped to the dimensions indicated on the plans. Unless otherwise specified, compaction shall be to the satisfaction of the Engineer or his authorized representative.

605.04 - Method of Measurement. Complete-in-place pipe underdrains, including all special sections and connections, will be measured from end to end by the linear foot along their center line. All appurtenances not listed as a separate pay item will not be measured for separate payment.

Excavation, backfill, compaction, and other related miscellaneous items will not be measured for separate payment. The cost thereof shall be included in the unit price bid for this item.

Aggregate for pipe bedding, if ordered by the City Engineer or his authorized representative, will be measured and paid for by volume in cubic yards in accordance with Section 907-304-1 or Section 203.

"Size II Stabilizer Aggregate" for filter material will be measured and paid for by volume in cubic yards in accordance with 907-304-1.

Geotextile fabric for wrapping of perforated pipe/filter bed for subsurface drainage will be paid for at the contract unit price per square yard. Required overlap of geotextile fabric will not be measured for additional payment. Geotextile fabric called out for other uses such as joint wrapping, hole covering, etc. shall not be measured for separate payment unless noted otherwise.

"Lamping" and making video of new storm drain lines shall not be measured for separate payment. The cost thereof shall be absorbed in the bid price per linear foot of new storm drain line.

605.05 - Basis of Payment. Underdrain items will be paid for at the contract unit prices for the respective items, which shall be full compensation for completing the work.

Payment will be made under:

907-605-A:	____" Perforated Corrugated PVC Drain Pipe	- per linear foot
907-605-B:	Geotextile Fabric for Subsurface Drainage	- per square yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-607-1 **CODE: (SP)**

DATE: 06/27/2017

SECTION 607 - FENCES AND CATTLEGUARDS

Delete all of the subsections of Section 607 in their entirety and insert the following:

607.01 - Description. The work under this section shall consist of removing and reconstructing an existing fence using existing materials; removing an existing fence and constructing a new fence using all new materials; or constructing a new fence (no existing fence removal) using all new materials. Where a new fence is specified, the fence along with gates where indicated shall be constructed of the type or types indicated by the Contract Documents unless specifically excluded. The Contractor shall secure and pay for all permits required on work required under this section of the specifications.

607.02 - Materials.

607.02.1 – General. When the contract contains a pay item for removal and reconstruction of an existing fence, the Contractor shall use the existing materials for the reconstruction of the fence. The Contractor shall be responsible for replacing all damaged fence items with new materials, which can be attributed to the Contractor's negligence during the removal or the reconstruction process. All new fence materials shall meet or exceed the minimum requirements specified in the following subsections.

Unless stated otherwise, metal materials for chain link fences and wooden fences as applicable shall be as follows: posts, gate frames, braces, rails, stretcher bars, truss rods, and tension wire shall be of steel. Gate hinges, post caps, stretcher bar bands, and other parts shall be of steel, malleable iron, ductile iron or equal except that post tops, rail ends, ties and clips may be of aluminum, except ties for six foot (6') fences shall be steel.

607.02.2 - Chain Link Fences – Six Foot and Under.

607.02.2.1 - Fabric. Chain link fabric shall consist of a fencing material from steel wire helically wound and interwoven in such a manner as to provide a continuous mesh without knots or ties except in the form of knuckling the ends of wires to form the selvage of the fabric.

Chain link fabric shall be galvanized commercial quality nine (9) gauge steel woven in a two-inch diamond mesh. Top and bottom selvage shall be knuckled. Basic steel wire shall be a medium high carbon quality. The permissible variation from the specified size of mesh shall be plus or minus one-eighth of one inch (1/8"). The tolerance in the diameter of the coated wire shall be plus or minus 0.005 inch.

The height of the fabric shall be the overall dimension from ends of knuckles. The tolerance of the nominal height shall be plus or minus one inch.

The weight of zinc coating shall Class 2, not be less than two ounces per square foot (2.0 oz./ft.^{2}) of uncoated wire surface as determined from the average of results of two or more specimens, and not less than 1.8 oz./ft.^{2} of uncoated wire surface for any individual specimen.

607.02.2.2 – End, Corner and Pull Posts. End, corner and pull posts shall be two and three-eighths inch (2 3/8") nominal outside diameter (O.D.) Type I (schedule 40) round posts weighing 3.65 pounds per foot (lb/ft). All posts shall be equipped with post tops.

Posts shall be hot dipped galvanized (zinc Grade E) with a minimum average zinc coating of 1.8 oz./ft.^{2} meeting ASTM F-1083.

607.02.2.3 – Intermediate (line) Posts. Intermediate posts shall be one and seven-eighths inch (1 7/8") nominal outside diameter (OD) Type I (schedule 40) round posts weighing 3.65 pounds per foot (lb/ft). All posts shall be equipped with tops. All posts shall be equipped with post tops.

Posts shall be hot dipped galvanized (zinc Grade E) with a minimum average zinc coating of 1.8 oz./ft.^{2} meeting ASTM F-1083.

607.02.2.4 – Gate Posts. Gateposts shall be Type I (schedule 40) with a nominal outside diameter (O.D.) as shown below:

Swing Gates:

GATE LEAF WIDTH	O.D. OF PIPE	PIPE WEIGHT
Up to and including 4 ft wide	2 3/8 inches	3.65 lb/ft
Over 4 ft and up to 10 ft wide	2 7/8 inches	5.79 lb/ft
Over 10 ft and up to 18 ft wide	4 inches	9.11 lb/ft

Rolling Gates:

Gateposts for rolling gates shall be a minimum of three and one-half inch outside diameter (O.D.) pipe weighing 7.58 pounds per foot (lb/ft).

Posts shall be hot dipped galvanized (zinc Grade E) with a minimum average zinc coating of 1.8 oz./ft.^{2} meeting ASTM F-1083.

607.02.2.5 – Post Braces. Post braces shall be provided for each gate, corner, pull, and end post for use with 6-foot (6') fences. Post braces shall be one and eleven-sixteenths inch (1 11/16") nominal outside diameter (O.D.), round Type I pipe weighing 2.27 pounds per foot (lb/ft).

The brace shall consist of a round tubular brace extending to each adjacent line post at approximately midheight of the fabric and a truss consisting of a rod not less than five-sixteenth

inch (5/16") nominal diameter and a turnbuckle for adjustment. The truss rod shall extend from the line post back to the gate, corner, pull, or end post as shown on the standard details.

607.02.2.6 - Top Rail. Top rails shall be one and eleven-sixteenths inch (1 11/16") nominal outside diameter (O.D.) round Type I (schedule 40) pipe weighing 2.27 pounds per foot (lb/ft). The rails shall be in lengths not less than eighteen feet (18'), and shall be fitted with couplings or swedged for connecting the lengths into a continuous run. The couplings shall be not less than six inches (6") long, with seven-hundredths inch (0.070") minimum wall thickness, and shall allow for expansion and contraction of the rail. Open seam outside sleeves shall be permitted only with a minimum wall thickness of one-tenth inch (0.100").

Suitable ties or clips shall be provided in sufficient number for attaching the fabric securely to the top rail at intervals not exceeding twenty-four inches (24").

Top rail shall be fastened to each gate, terminal, corner, pull and end post with heavy pressed steel connections or by other approved means.

Top rails shall be hot dipped galvanized (zinc Grade E) with a minimum average zinc coating of 1.8 oz./ft.^{2} meeting ASTM F-1083.

607.02.2.7 - Gates

607.02.2.7.1 – General. The base materials of the gate frame shall be shall be a minimum of one and eleven-sixteenths inch (1 11/16") nominal outside diameter (O.D.) round Type I (schedule 40) pipe weighing 2.27 pounds per foot (lb/ft). The members shall be welded at all corners or assembled with corner fittings. Gates assembled with corner fittings shall have adjustable truss rods on panels five foot (5') wide or wider. Truss rods shall be the same base metal and finish as the gate frames.

Gate frames shall be zinc-coated in accordance with ASTM Specifications F 1043 or f 1083, or a combination thereof, and shall match that selected for any adjoining fence framework. Welded joints shall be coated in accordance with Practice A780, employing a zinc-rich paint.

Gate fabric shall be the same type as used in fence construction. The fabric shall be securely attached to the gate frame at intervals not exceeding fifteen inches (15").

Gate opening size shall be as shown on the drawings or as directed by the City Engineer or his authorized representative in the field. Opening size shall be the clear opening measured from the inside face to the inside face of the gate posts.

Gate posts shall be in accordance with the subsection entitled "Gate Posts" of this section of the specifications.

All gate accessories shall be of the materials as specified for the fence unless specified otherwise.

607.02.2.7.2 – Swing Gates. Swing gates shall conform to ASTM F 900. Gate leaves shall have vertical interior bracing at maximum intervals of eight feet (8'). Interior bracing shall be a minimum of one and eleven-sixteenths inch (1 11/16") nominal outside diameter (O.D.) round Type I (schedule 40) pipe weighing 2.27 pounds per foot (lb/ft).

607.02.2.7.3 - Roller Gates. Wheels shall be eight-inch (8") truck wheels with hard rubber tires and metal hub. Rear track wheels shall be pressed steel and sized properly for the size of track specified. The track shall be one and eleven-sixteenths inch (1 11/16") nominal outside diameter (O.D.) round Type I (schedule 40) pipe weighing 2.27 pounds per foot (lb/ft).

607.02.2.7.4 – Gate Hardware

607.02.4.7.4.1 – Hinges. Hinges shall be structurally capable of supporting the size of gate leaf specified and allowing the gate to open and close without binding. The hinges shall be so designed to permit the gate to swing a full one hundred eighty degrees (180°). Bottom hinges shall be ball and socket types designed to support the weight of the gate on the post footing. The upper hinges shall be wrap-around adjustable type.

607.02.2.7.4.2 – Gate Latches. Gate latches for single swing gates shall be capable of retaining the gate in a closed position and shall have a provision for padlock.

Gate latches for double swing gates shall be the same as single swing. In addition, double swing gates shall be equipped with a drop rod or plunger bar arranged to engage the gate stop. Locking devices shall be constructed so that the center drop rod or plunger bar cannot be raised when the gate is locked.

607.02.2.7.4.3 – Gate Stops and Keepers. Gate stops shall be provided for all double gates.

Keepers shall be provided for each gate leaf over five-foot (5'). Keepers shall consist of a mechanical device for securing the free end of the gate when in full open position.

607.02.2.8 - Tension Wire. Tension wire shall be spiraled, Number Seven (#7) gauge plus or minus five-thousandths inch (0.005") in diameter, conforming to ASTM A-824.

Tension wire coating shall conform to ASTM A-824 Type II Zinc-coated Class 2, 1.20 ounces per square foot (oz/ft^2) and as per manufacturer's specifications. The fabric shall be attached securely to the tension wire at intervals not exceeding twenty-four inches (24").

607.02.2.9 - Tension Bars. Tension bars shall be not less than three-sixteenths inch (3/16") by three-fourths inch (3/4") and shall be not less than two inches (2") shorter than the nominal height of the fabric with which they are to be used. One tension bar shall be provided for each end and gatepost and two for each corner and pull post.

607.02.2.10 - Ties or Clips. Ties or clips of adequate strength shall be provided in sufficient number for attaching the fabric to all line posts at intervals not exceeding fifteen inches (15”); and not exceeding twenty four inch (24”) when attaching fabric to top rails or tension wire.

607.02.2.11 - Bands or Clips. Bands or clips of galvanized steel or aluminum alloy per ASTM F-626 shall be provided in sufficient number for attaching the fabric and stretcher bars to all terminal posts at intervals not exceeding fifteen inches (15”). Tension bands shall be formed from flat or beveled steel and shall have a minimum thickness after galvanizing of seventy-eight thousandths inch (0.078”); and minimum width of three-quarters inch (3/4”) for posts four inch (4”) outside diameter (O.D.) or less and one hundred eight thousandths inch (0.108”) thickness by 7/8 inch for posts larger than four inch (4”) O.D. Brace bands shall be formed from flat or beveled steel and shall have a minimum thickness of one hundred eight thousandths inch (0.108”) after galvanizing; and a minimum width of three-quarters inch (3/4”) for four inch (4”) outside diameter posts. Standard mill tolerances of ± 0.005 inch on thickness and one-hundredth inch (0.010”) on width shall apply. Attachment bolts shall be five-sixteenth inch by one and one-quarter inch (5/16” x 1-1/4”) galvanized carriage bolts with nuts.

607.02.2.12 - Post Tops. Post tops shall consist of ornamental tops. The top shall be provided with a hole suitable for the through passage of the top rail. The post tops shall fit over the outside of posts and shall exclude moisture from posts.

607.02.2.13 – Zinc Coating. All Type I and Type II steel framework and other iron parts shall be zinc coated by the hot-dipped method, using zinc Grade E. Zinc weight shall be as listed throughout this specification section and shall be determined in accordance with ASTM A-90.

607.02.3 - Wooden Fences. If metal posts, rails, or bracing is specified for wood fence, metal materials shall be in accordance with the specification for chainlink fences above.

607.02.3.1 - Fence Boards. The new fence boards shall be of the same size and type of material as the existing fence boards. The fence style and board tops shall be as indicated on the drawings or shall match the pattern of the existing fence boards that were removed (example: dog eared).

Boards for the fence shall be 5/8” x 6” x 6’-0, unless otherwise specified, cedar, redwood, cypress or pressure treated southern pine and shall be No. 2 grade or better.

607.02.3.2 - Posts. All wood posts shall be southern pine and shall be treated in accordance with AWPA C14. Posts shall be 4” x 4” x 8’-0, unless otherwise specified. Posts shall have been pressure treated with pentachlorophenol or chromated copper arsenate (CCA) preservative.

607.02.3.3 - Horizontal Rails. All wood rails shall be southern pine and shall be treated in accordance with AWPA C14. Rails shall be No. 2 selected grade two by four inch (2”x4”) nominal size by sixteen feet (16’-0) long and cut to required length. Rails shall have been pressure treated with pentachlorophenol or chromated copper arsenate preservative.

607.02.3.4 - Braces. All wood braces shall be southern pine and shall be treated in accordance with AWPA C14. Braces shall be two by four inch (2" x 4") nominal size. Braces shall have been pressure treated with pentachlorophenol or chromated copper arsenate preservative.

607.02.3.5 - Gates. The gate frame shall be made from the bracing material as described above and the wood screen shall be of the same material and configuration as the fence boards.

607.02.3.6 - Hardware and Fasteners. Gate hardware such as bolts, nuts washers, latches, pulls, hinges and hardware sets shall conform to ASTM Designation A 307. Hardware shall be hot dipped galvanizing. Nails for attaching boards to framing shall be galvanized screw nails for use with a nail gun or galvanized ring-shank nails set recessed from the board surface.

607.02.4 - Concrete. Concrete for footings shall be a 1:2:4 mix capable of 2,500 psi in 28 days. Concrete shall cure three (3) days prior to installation of fence fabric or boards.

607.03 - Construction Requirements.

607.03.1 – General. When the contract contains a pay item for removal and reconstruction of an existing fence, the Contractor shall carefully measure and record the existing fences location, condition and height where removal is required for construction. Also location and size of gate shall be noted. The Contractor shall store the existing fence materials at a location safe from burglary, vandalism, etc. until the reconstruction process is initiated. The Contractor shall reconstruct the existing fence in its prior location, of its proper size, utilizing existing material, and at the prior grade. The fence shall be acceptable to the property owner and the Engineer before payment will be authorized. All work shall be done in a neat and orderly manner and shall not inconvenience the property owner or tenant. The reconstruction of existing fences and the installation of new fences shall meet the construction requirements stated in the following subsections.

607.03.2 - Chain Link Fence. Installation of chainlink fencing and gates shall meet the requirements of ASTM F 567.

607.03.2.1- Posts. All posts shall be spaced so as to assure proper support of the fence, but shall have a maximum spacing of ten-foot (10'). End posts shall be set at the beginning and end of each continuous length of fence. Corner posts shall be set at abrupt changes in vertical and horizontal alignments. Gateposts shall be placed on each side of gate openings.

Post shall be set in concrete as shown on the drawings in a vertical, plumb position. The concrete post foundation dimensions shall be as shown on the drawings. The minimum diameter of the hole dug for the concrete placement shall be ten-inches (10"), but shall not be less than four times the largest cross section of the post, unless otherwise specified. The minimum depth of the hole shall be twenty-four inches (24") plus three-inches (3") for each additional one-foot (1') fence height over four-foot (4'). The top of the concrete foundation shall extend above grade two-inches; however the top of the concrete foundation shall be two-inches below grade if a cover of sod or other material is provided. The top of the concrete bases shall be trowel finished and sloped to drain away from the

posts. All post settings shall be performed carefully so that all posts will be vertical and in true alignment.

When setting gateposts, caution must be exercised to insure that the gateposts are set the exact distance apart so that gates and accessories will fit the opening. The tops of the gateposts shall be set level, one with another.

The diagonal braces shall be securely fastened to the terminal post and the adjacent line post or its footing or a footing of equal size. There should be no more than a fifty-degree (50°) angle between the brace and the ground. The horizontal braces (if used in place of diagonal braces) shall be securely fastened with truss rods from the bottom of the terminal post to the adjacent line post where the brace rail terminates. The brace shall be attached halfway point of the terminal post above grade.

607.03.2.2 – Top Rail. The top rail must be supported at each post so that a continuous brace from end to end of each stretch of fence is formed. The top rail shall be securely fastened to the terminal post. The top rail shall be installed continuous with sleeves or couplings at the joints to allow for expansion and contraction.

607.03.2.3 - Fabric. The wire fabric shall be placed on the outside of the fence line. Where splices are necessary, they shall be made by bringing the ends close together and weaving a picket in such a way that it will catch with each twist each separate mesh of the end pickets of both rolls of fabric.

The fabric shall be installed two-inches (2”) above finished grade.

Standard chain link stretching equipment shall be used for stretching the fabric before tying it to the posts. The fabric shall be tightened so that the fabric has a smooth uniform surface, free from sag.

Stretcher bars with tension bands or other suitable devices shall be installed at a maximum of fifteen-inch (15”) intervals. The fabric shall be fastened to the line posts at intervals not exceeding fifteen-inches (15”). The fabric shall be attached to top rail and tension wire at intervals not exceeding twenty-four (24”) intervals.

607.03.2.4 – Tension Wire. Tension wire should be stretched from end to end of each stretch of fabric within the bottom six inches (6”) of fabric. The tension wire should be taut and free from sag. The fabric shall be attached securely to the tension wire at intervals not exceeding twenty-four inches (24”).

607.03.2.5 - Gates. The gates shall be hung on gate fittings as approved (per submittal) by the City Engineer or his authorized representative. Sockets shall be set in concrete in the center of the double gates so that the plunger pin will fit perfectly in the socket when the gates are in a closed position. If replacing an existing gate, the gate shall be placed back at the original location of the existing gate in the field. All hardware shall be secured, properly adjusted and left in perfect working order.

607.03.3 - Wood Board Fence.

607.03.3.1 - Boards. The fence boards shall be installed with a maximum of three-eighths inch (3/8") space between boards with a nail gun or hammer. Recess nail heads approximately one sixteenth inch (1/16") in the boards. The top of fence boards shall be level from end to end of fence. Hold the bottom of the fence approximately three inches (3") above uniform grade line. Boards shall be placed with the rails and braces toward the private property and the flush boards toward the public property, unless otherwise stated.

607.03.3.2 - Posts. All posts shall be spaced so as to assure proper support of the fence but shall not exceed eight foot (8') maximum spacing. The posts shall be set in a concrete footing. The top of the concrete footing shall be flush with or slightly above ground, trowel finished and sloped to drain away from the posts. Holes for the posts shall be dug twelve inch (12") in diameter to assure proper support of the fence. All post settings shall be performed carefully so that all posts will be vertical and in true alignment. When setting gateposts, caution must be exercised to insure that the gateposts are set the exact distance apart so that gates and accessories will fit the opening. The tops of the gateposts shall be set level, one with another.

607.03.3.3 - Horizontal Rails. Install rails horizontally at the top, center and bottom of posts. Stagger splices using galvanized rail connectors. Space splices a maximum of six inches (6") past posts so that no more than one splice occurs in each bay.

607.03.3.4 - Braces. Install braces diagonally between rails in the gate frame

607.03.3.5 - Gates. The gates shall be hung on gate fittings as approved (per submittal) by the Engineer. The gates shall be placed back at the original location of the existing gate in the field. All hardware shall be secured, properly adjusted and left in perfect working order.

607.04 - Method of Measurement. All new fencing will be measured by the linear foot of completed fence. Measurements will be made along the bottom of the fence and openings will be excluded, except openings for gates unless otherwise specified herein.

Where a separate pay item for swing gates is included in the schedule of bid items, the pay item shall apply only to new gates, which are not replacing an existing gate. The gates shall be measured for payment per each gate in place. Where a separate pay item for a swing gate is not included in the schedule of bid items or where a new swing gate is replacing an existing swing gate, the gate shall be measured by the linear foot of completed fence containing the gate.

Roller gates will be measured per each completed in place.

The price bid for swing gates or roller gates (if there is a separate pay item on the schedule of bid items) shall include gate posts, frame, fabric, clips, bands, ties, bracing, hardware, wheels, rollers, tracks, concrete and all other accessories associated with the gate.

The removal and replacement of existing fence completed and accepted will be measured for payment by the linear foot.

Contractor is responsible for staking the proper alignment of all fence line(s). No separate payment will be made for this staking. Posts, rails, concrete, anchors, expansion sleeves, gates, hardware, and all other accessories necessary for the construction will not be measured for separate payment, unless stated otherwise in this subsection. The cost thereof shall be included in the unit prices bid for other items.

607.05 - Basis of Payment. Fencing items will be paid for at the contract unit prices for the respective items, which shall be full compensation for completing the work.

Payment will be made under:

907-607-A:	Remove Existing and Install New Chain Link Fence	- per linear foot
907-607-B:	Remove Existing and Install New Wood Privacy Fence	- per linear foot
907-607-C:	Remove and Reconstruct Existing Fence (All Types)	- per linear foot
907-607-D	Remove Existing Fence (All Types)	- per linear foot
907-607-E:	Install New Chain Link Fence	- per linear foot
907-607-F:	Install New Wood Privacy Fence	- per linear foot
907-607-G	Remove Existing Gate (All Types)	- per each
907-607-H:	Install New Chain Link Roller Gate	- per each
907-607-J:	Install New Chain Link Swing Gate	- per each
907-607-M:	Install New Wood Swing Gate	- per each

CITY OF BILOXI

SPECIAL PROVISION NO. 907-608-1 **CODE: (SP)**

DATE: 06/27/2017

SECTION 608 - CONCRETE SIDEWALKS

Subsection 608.02 - Materials

Delete the second paragraph of Subsection 608.02 and insert the following paragraph:

> Concrete used for sidewalks shall be Class "B" (3000 psi) and meet the requirements of Section 804.

Subsection 608.03.2 - Excavation and In-Grade Preparation

After the first paragraph of Subsection 608.03.2, add the following paragraph:

> The material under sidewalks shall be compacted in 6 to 8 inch lifts to 95% density in accordance with ASTM D 1557.

Subsection 608.03.4 - Handling, Measuring, Proportioning, and Mixing Materials

Delete the first sentence of Subsection 608.03.4 and insert the following:

> The method of handling, measuring, proportioning and mixing concrete materials shall conform to Section 804.

Subsection 608.03.5 – Placing Concrete

After the last paragraph of Subsection 608.03.5, add the following paragraph:

> Handicap ramps shall be placed at all street intersections where sidewalks are available on both sides of the street for pedestrian use. Handicap ramps shall be installed in accordance with the drawings and the latest edition of the American National Standard "Accessible and Usable Building and Facilities".

Subsection 608.03.6 - Joints

After the last paragraph of Subsection 608.03.6, add the following paragraph:

> Expansion joints shall be installed at thirty-foot (30') intervals and contraction joints provided at five-foot (5') intervals.

Subsection 608.03.7 - Protection and Curing

Delete the first paragraph of Subsection 608.03.7 and insert the following paragraph:

> Concrete shall be protected and cured in accordance with the requirements of 501.03.20.1 or by other methods approved by the City Engineer or his authorized representative. Concrete shall be cured for at least 72 hours. During curing time all traffic, both pedestrian and vehicular, shall be kept off the concrete. The Contractor shall protect the work from damage until release of maintenance. All sections, which are damaged before release of maintenance, shall be removed and reconstructed by the Contractor without extra compensation.

Subsection 608.05 - Basis of Payment

Delete the first paragraph of Subsection 608.05 and add the following:

> Concrete sidewalks (including decorative sidewalks such as stamped-concrete, washed aggregate, stained concrete, etc.) will be paid for at the contract unit price per square yard, which shall be full compensation for completing the work. Decorative walks shall be paid for as Concrete Sidewalks (With or Without Reinforcement - All Types). No additional compensation will be provided for the replacement of decorative walks.

Delete pay items 608-A and 608-B and add the following:

907-608-A: Concrete Sidewalk (Without Reinforcement-All Types) - per square yard

907-608-B: Concrete Sidewalk (With Reinforcement-All Types) - per square yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-609-1 **CODE: (SP)**

DATE: 06/29/2017

SECTION 609 - CONCRETE GUTTER, CURB, AND COMBINATION CURB AND GUTTER

Subsection 609.02 - Materials

Add the following sentence to the end of the first paragraph of Subsection 609.02:

> Concrete used for curb, gutter, rolled type curb and gutter and combination curb and gutter shall be Class "B" (3000 psi).

Subsection 609.03.1 - Excavation and In-Grade Preparation

After the last paragraph of Subsection 609.03.1 add the following paragraph:

> The material under all curb and gutter shall be compacted in 6 to 8 inch lifts to 95% density in accordance with ASTM D 1557.

Subsection 609.03.2.4 - Sections and Joints

After the last paragraph of Subsection 609.03.2.4 add the following paragraph:

> Expansion joints shall be installed at thirty foot (30') intervals and contraction joints provided at ten foot (10') intervals.

Subsection 609.03.2.5 - Finishing

After the last paragraph of Subsection 609.03.2.5 add the following paragraph:

> The Contractor shall mark the face of the curb with an "S" or "W" stamped into the wet concrete where the curb is finished over a sewer or water service. Also the curb shall be marked with a "V" where the curb(s) is adjacent to a water valve. The marking in the curb shall be legible. The letters shall be an overall height of 3 inches and shall be embedded into the concrete a minimum depth of one-half inch and a maximum depth of one inch. The stamping tool shall be subject to approval by the City Engineer or his authorized representative.

Subsection 609.03.2.6 - Protection and Curing

Delete the first paragraph of Subsection 609.03.2.6 and insert the following paragraph:

Concrete shall be cured for at least 72 hours. Curing shall be as set out in 501.03.20.1 or by other methods approved by the City Engineer or his authorized representative.

Subsection 609.04 - Method of Measurement

Delete the last sentence of the first paragraph of Subsection 609.04 and insert the following:

No deduction will be made for curb and gutter running the length of driveways.

Delete the last two paragraphs of Subsection 609.04 and add the following paragraphs:

Deduction in length will be made for drainage structures such as catch basins and inlets installed in the curbing.

Excavation, backfill, expansion joint material, curb stamping and other related miscellaneous items will not be measured for separate payment. The cost thereof shall be absorbed in the unit prices bid for other items.

Subsection 609.05 - Basis of Payment

Following the phrase "Payment will be made under" add the following pay item number:

907-609-F: Rolled Type Concrete Curb and Gutter - per linear foot

CITY OF BILOXI

SPECIAL PROVISION NO. 907-613-1 **CODE: (SP)**

DATE: 8/27/20

SECTION 613 – ADJUSTMENT OF CASTINGS, GRATINGS, AND UTILITY APPURTENANCES

Subsection 613.02 – Materials

After the last sentence of Subsection 613.02, add the following sentence:

> New materials for water valve box adjustment shall be in accordance with Special Provision 907-644-1 "Water Mains and Appurtenances" of this specification.

Subsection 613.03 - Construction Requirements

Delete the second paragraph of Subsection 610.03.1, and substitute the following paragraph:

> Where a casting, grating or utility appurtenance is to be lowered, the masonry shall be removed to sufficient depth so that a set of proper dimensions may be reconstructed to receive the casting, grating or utility appurtenance at the new grade. Where the castings or grating is to be raised less than one foot, a new ring of masonry or a rubber composite adjustment riser such as Infra-Riser (or approved equal) may be added without disturbing the old masonry. The use of metal riser rings shall be approved by the City Engineer prior to installation. Where the distance to be raised exceeds one foot, the old masonry shall be removed to sufficient depth, as directed by the City Engineer, to permit a neat and workmanlike extension up to the new grade.

After the last paragraph of Subsection 613.03.1, add the following paragraph:

> All adjustments of castings shall be in a safe manner and in accordance with standard industry practices, as approved by the City Engineer or his authorized representative. If existing conditions are discovered during construction that will create an unsafe condition, in the opinion of the City Engineer, if adjusted in a standard industry fashion, then an alternate modification shall be required. If the City Engineer or his authorized representative orders an alternate modification that in his opinion requires additional cost beyond the price bid for adjustment, the ordered work shall be accomplished as provided in 104.03 – Extra Work.
>
> Water valve boxes shall be adjusted by one of the following methods:

(a) If threaded adjustment is available, the threaded pieces of the valve box shall be adjusted to the proper grade.
(b) If the valve box is to be raised less than three inches (3") and no threaded adjustment is available, risers shall be added to the valve box.
(c) If the valve box is to be raised more than three inches (3") and no threaded adjustment is available, the stack pipe shall be removed and replaced with the proper length pipe for the new grade.
(d) If the valve box is to be lowered and no threaded adjustment is available, the stack pipe shall be cut to proper length for the new grade.

The adjustment of casting for water valves shall include the plumbing and centering of the valve box, riser and stack pipe on the valve nut. A valve wrench shall be used prior to acceptance of adjustment of casting to verify compliance with requirements stated in this section of the specification.

Subsection 613.04 – Method of Measurement

After the last paragraph of subsection 613.04, add the following paragraph:

If a separate pay item is listed in the proposal documents, adjustment of water valve boxes will be paid for at the contract price per each. The cost bid for each shall include, adjustment risers, stack pipes, filter fabric and any other items necessary for the proper adjustment in accordance with this section of the specification. If a separate pay item is not listed in the proposal documents for "Adjustment of Water Valve Box", adjustment of valve boxes shall be included in the pay item for "Adjustment of Castings".

If no pay item is included for adjustment of castings, gratings, or water valve boxes, the cost thereof shall be absorbed in other items bid.

Subsection 613.05 - Basis of Payment

Following the phrase "Payment will be made under" add the following pay item number:

907-613-E: Adjustment of Water Valve Box - per each

CITY OF BILOXI

SPECIAL PROVISION NO. 907-614-1 **CODE: (SP)**

DATE: 11/7/11

SECTION 614 - CONCRETE DRIVEWAYS

Subsection 614-02 - Materials

Delete the parts (a) and (b) after the first paragraph of subsection 614.02 and add the following:

(a) Concrete. The materials used in the manufacture of concrete shall conform to the requirements for Class "B" Concrete as set out in Section 804. Concrete used for driveways shall be Class "B" (3000 psi).

(b) Expansion Joint Filler. Expansion joint filler shall be preformed joint filler and shall conform to the requirements as set forth in Section 707.

Subsection 614.03.2 - Preparation of Grade

After the last paragraph of Subsection 614.03.2 add the following paragraph:

The material under concrete driveways shall be compacted in 6 to 8 inch lifts to 95% density in accordance with ASTM D 1557.

Subsection 614.03.4 - Manufacturing and Placing Concrete

Delete the first paragraph of Subsection 614.03.4 and insert the following paragraph:

The concrete used in construction of driveways shall be manufactured, proportioned and placed in accordance with the requirements of Section 804.

Subsection 604.03.6 - Expansion Joints

Delete the first sentence of Subsection 614.03.6 and insert the following:

Expansion joints shall be preformed joint filler of the specified thickness, and shall be placed at the locations indicated on the plans.

After the last paragraph of Subsection 614.03.6 add the following paragraph:

Expansion joints shall be installed in areas where the new driveway abuts any other concrete or asphalt, such as sidewalks, existing driveways, curb and gutter,

roadway, etc. Contraction joints shall be installed at five-foot (5') intervals to correspond with the contraction joints on the sidewalk.

Subsection 614.03.7 - Protection and Curing

Delete the first paragraph of Subsection of 614.03.7 and insert the following paragraph:

After the concrete is completed, it shall be protected and cured in accordance with the requirements of 501.03.20 and 501.03.20.1 or other approved method.

Subsection 614.03.9 – Existing Driveways.

Insert the following subsection after subsection 614.03.8:

Subsection 614.03.9 – Existing Driveways. Any damage incurred to existing driveways beyond the limits of the planned driveway reconstruction that in the opinion of the City Engineer or his authorized representative is due to the negligence of the Contractor shall be replaced by the Contractor in accordance with this specification at no additional expense to the City. The concrete shall be removed back to the nearest construction joint or saw-cutting the entire width of the driveway to remove the entire width of driveway containing the damaged area. The City Engineer or his authorized representative shall designate the limits of the concrete reconstruction.

If the existing condition of an existing driveway is such that a portion of the driveway cannot properly be reconstructed (i.e. the existing driveway is crushed, broken, etc.), the City Engineer or his authorized representative shall direct the Contractor to remove an additional portion of the driveway back to a point where reconstruction can be properly performed.

Any existing decorative driveways that are disturbed during construction that consist of a decorative type of concrete, such as stamped-concrete, washed aggregate, stained concrete, etc., shall be replaced in kind. The cost of this work shall be included in the concrete driveway pay item. No separate payment or additional compensation will be provided for the replacement of decorative driveways.

Subsection 614.04 - Method of Measurement

Delete Part (b) Subsection 614.04 and add the following:

(b) Where the driveway joins combined curb and gutter construction, the driveway area shall include the area from the back line of the curb and gutter to the back line of the sidewalk. Where the driveway ties into an existing

driveway, the area between the back line of the sidewalk and the tie-in shall be included for payment.

Excavation and haul of excavation will not be measured for separate payment. The cost thereof shall be absorbed in the unit prices bid for other items.

Subsection 614.05 - Basis of Payment

Delete the first paragraph of Subsection 614.05 in its entirety and replace with the following:

Concrete driveways (including decorative driveways such stamped-concrete, washed aggregate, stained concrete, etc.) measured as provided in 614.04, will be paid for at the contract unit price per square yard, complete in place and including curb returns; which price shall be full compensation for all backfilling, excavation and disposal of surplus materials; and for all materials, forms, equipment, tools, labor and incidentals necessary to complete the work.

Delete the third paragraph of Subsection 614.05 in its entirety.

Delete pay items 614-A and 614-B and replace with the following pay items:

907-614-A: Concrete Driveway (Without Reinforcement - All Types) - per square yard

907-614-B: Concrete Driveway (With Reinforcement – All Types) - per square yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-618-1 **CODE: (SP)**

DATE: 06/30/17

SECTION 618 - MAINTENANCE OF TRAFFIC AND TRAFFIC CONTROL PLAN

Subsection 618.03.1 - General.

Add the following paragraphs to the end of Subsection 618.03.1:

The Contractor shall provide and place aggregate in all trench excavations after backfilling operations have been completed. These aggregate surfaces shall be maintained daily during the entire project to a degree to provide a smooth riding surface free of potholes, ruts, etc. Limestone for maintenance of roadway is to be at no additional payment to the Contractor. All items necessary for continuous maintenance of roadway, driveway entrances, etc. shall be included in Pay Item No. 907-618-A, and shall not be measured and paid for separately.

At the end of the workday and especially on weekends, access to all residents and business establishments shall be restored unless specific permission has been obtained from the affected individual not to restore access. Provisions must be made at all times for access to all structures by the fire department and other emergency vehicles.

The roadways shall be inspected daily, during and after rainstorms, and all deficiencies repaired to form a smooth and acceptable riding surface.

One lane of traffic flow shall be maintained on the roadway at all times. Specific attention shall be given to business establishments on this roadway. The Contractor shall maintain access to these establishments at all times after trench excavations are closed by providing ample and sufficient aggregate in any and all trenches and/or excavations to allow parking of customers' vehicles and also foot traffic by pedestrians.

It shall be the Contractor's responsibility to monitor and maintain ingress and egress to any and all business establishments during the duration of the work.

After placement of any pavement course, short-term striping will be installed before work is discontinued for the day or as soon thereafter as weather conditions will permit, unless directed otherwise by the City Engineer or his authorized representative. Short-term striping shall meet the requirements of Subsection

619.03.3. Short-term striping shall be paid for under Pay Item Number 619-A if used.

Subsection 618.03.2 – Barricades, Signs, and Flaggers.

Add the following paragraph to the end of Subsection 618.03.2:

Any sign, which is not in use, shall be removed from the project or completely covered as approved by the City Engineer's authorized representative. Examples of signs that may not be "in use" shall include, but is not limited to:

a. Any construction signs installed prior to the start of construction or construction sign still in place after construction is complete.
b. Construction signs dealing with certain phases of the project, which are not in effect.
c. Non-construction regulatory signs in construction areas which are not applicable to the construction zone, such as non-construction speed limit signs.
d. Construction detour signs when the detour is not in effect.
e. Construction "No Thru Traffic" signs during times when through traffic is allowed.
f. Projects that have different conditions at night or on weekends/holidays, than during the construction day.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-624-1 **CODE: (SP)**

DATE: 05/18/2023

SECTION 624 - SANITARY SEWER LINES AND APPURTENANCES

624.01 - Description. The work covered by this section consists of furnishing all labor, equipment and materials and performing all operations in connection with the installation of sanitary sewer lines, as indicated on the plans and as specified herein. The work includes clearing, grubbing, trenching, dewatering, bedding, pipe laying, backfilling, testing, bypass pumping, connections to existing manholes, fittings, and appurtenances required for a complete installation.

624.02 - Materials.

624.02.1 - Polyvinyl Chloride (PVC) Sewer Pipe. Polyvinyl chloride sewer pipe with a diameter of six inches (6") or larger, including pipe for house connections, shall be specifically designed to carry domestic sewage by gravity flow and shall be green in color and shall meet the requirements of ASTM D3034-81 with a maximum SDR equal to 26 and a minimum F/AY stiffness of 115 psi when tested in accordance with ASTM D2412. An acceptable equivalent is AWWA C900-07, DR 18 pipe (green in color).

All joints shall consist of an integral bell with a factory installed "locked in" elastomeric gasket. The spigot end of each joint shall be factory beveled.

All fittings shall be standard manufactured fittings, which meet the requirements of ASTM D3034-81 SDR-26 or AWWA C900-07, DR 18 pipe.

624.02.2 – Large Diameter PVC Sewer Pipe. Large diameter PVC sewer pipe shall be any pipe 18” or greater. The pipe and fittings shall be homogenous throughout and free from visible cracks, holes, foreign inclusions and other injurious defects. The pipe shall be as uniform as commercially practical in color, opacity, density and other physical properties.

PVC solid wall pipe and fittings shall be manufactured in accordance with the requirements of ASTM F 1803, D3034, F679, and D1784, latest edition with the following additional performance requirements.

The pipe shall meet a minimum pipe stiffness of 115 psi (PS-115).

Pipe 30 inches and larger shall be capable of passing an impact test of 440 ft/lbs when tested at time of production in accordance with the test procedure found in ASTM F 1803. Independent laboratory certification shall be provided with the submittal that the pipe has been tested and been found capable of meeting this requirement.

PVC solid wall pipe joints shall be the bell and spigot type, water-tight, and shall conform to ASTM D 3212.

Gaskets shall meet the requirements of ASTM F 477 and be molded into a circular form or extruded to the proper section, then spliced into circular form, and shall be made of a properly cured high grade elastomeric compound.

Gaskets shall be factory installed and chemically bonded to the bell end of the pipe. Field installed gaskets and field cut beveled lengths of pipe shall be done in accordance with the manufacturer's instructions and recommended equipment and materials.

All pipe gaskets and spigots will be thoroughly cleaned and lubricated before assembly.

Factory tapered spigot ends shall be made of PVC and shall be formed during the manufacturing process by heating the inner and/or outer wall and remolding. The use of putty, filler, rubber or plastic inserts or wedges to form either the inner or outer wall of the pipe will not be allowed on spigots or bells.

624.02.3 - Ductile Iron Sewer Pipe. Ductile iron pipe for gravity sewers or sewer force main shall conform to ANSI Specifications A21-51. Wall thickness shall not be less than Class 50 unless otherwise specified. The words "Ductile Iron" and thickness class shall be conspicuously marked on each joint of pipe. Pipe shall be furnished with a coal tar coating inside and outside.

Mechanical joints shall meet the requirements of ASA A-21.11 except as amended by ASA A-21.51.

Fittings for ductile iron pipe shall be mechanical joint ductile iron castings with a coal tar coating in accordance with ANSI-AWWA C110/A21.10.

Bolting shall be of the type recommended by the pipe supplier and shall be of a material with a minimum 45,000 psi tensile strength, with semi-finished heavy nuts in accordance with ANSI/AWWA C111/A21.11.

624.02.3.1 – Polyethylene Encasement. Provide 8 mil minimum thickness polyethylene encasement (wrap) on all buried ductile iron pipe, fittings, and accessories in accordance with AWWA C105 (ANSI A21.5). Polyethylene encasement materials shall consist of three layers of co-extruded linear low-density polyethylene (LLDPE), fused into a single layer. The inside surface of the polyethylene wrap shall be infused with an antimicrobial biocide to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion. The color shall be while. Produce and manufacturer shall be V-Bio® Enhanced Polyethylene Encasement, or approved equal.

624.02.4 - Connectors and Adapters. Connectors and adapters shall be especially made for joining pipes of different materials and diameters. Pipe connectors between two different types of

pipes shall be made by using flexible couplings with stainless steel shear rings with necessary donuts and bushings as required. These couplings will be 1002, 1003, 1006, 1051, and the 1056 series as manufactured by Fernco or equal. All connectors must comply with the requirements of ASTM C425.

624.02.5 - Pipe Gaskets at Manholes. Gaskets around PVC pipe as it passes through the wall of new or existing sanitary manholes shall be flexible concrete manhole adapters or waterstops as manufactured by Fernco or equal.

624.02.6 - Grout. An approved non-shrink grout shall be used for all necessary grouting.

624.02.7 - Polyvinyl Chloride (PVC) Pressure Pipe for Force Mains. PVC sanitary sewer force mains shall be in accordance with AWWA C-900-07, SDR18, approved by the National Sanitation Foundation (NSF) and shall be U.L. listed. Pipe shall be white or green in color and furnished in standard lengths (minimum 20 feet) with integrally cast bells or couplings using elastomeric gaskets, which meet the requirements of ASTM D3139 and F477. All necessary adapters and retaining glands for connection to fittings shall be provided.

624.02.8 - Fittings for Force Mains. Fittings for sewer force mains of four-inch (4") diameter and larger shall be seal coated ductile iron with mechanical joint ends. Mechanical joints shall be recommended by the manufacturer for use with AWWA C900 pipe. Fittings shall be manufactured in accordance with AWWA C104. Bolts shall be of the type recommended by the pipe supplier and shall be of material with a minimum 45,000 psi tensile strength with semi-finished heavy nuts in accordance with ANSI/AWWA C111/A21.11.

624.02.9 - Air Release Valves. Valves shall function automatically to release to the atmosphere air that may accumulate in the pipeline, and shall prevent leakage of wastewater. Each valve shall be furnished with all required accessories for maintenance of the valves.

Materials used in manufacture of air release valves and accessories shall be new and shall be in accordance with all ASTM and other industry standards and as specified herein.

The body and cover shall be cast iron Class 30 in accordance with ASTM A48 or Class B in accordance with ASTM A126.

The float and guide shaft shall be stainless steel in accordance with ASTM A240.

The internal linkages shall be stainless steel in accordance with ASTM A240; or bronze in accordance with ASTM B584; or delrin in accordance of ASTM D2133.

624.02.9.1 - Design. The valve shall have a float stem and body, which keeps the valve operating mechanism as free from contact with the sewage as possible. The float shall hang freely in the center of the valve body with about one half inch (1/2") clearance all around to prevent large solids getting above the float and float's free suspension.

The valve inlet shall have an internal diameter of four inches (4") and shall have a minimum orifice diameter of 7/16 inches.

The air release valve required in each manhole shall be carefully evaluated. The overall height of the valve shall be such that when in place, as indicated on the plans, a minimum clearance between the top of the valve cover and the bottom of the concrete slab of the manhole shall be six inches (6"). Whenever possible, the valve furnished shall be such that when in place the clearance between the valve cover and the bottom of the concrete slab shall permit removal of the internal float and guide shaft without dismantling the valve.

The valve and accessories shall be suitable for operation at pressures of seventy-five pounds per square inch (75 psi).

The valve inlet end shall be flanged in accordance with ANSI 816.1, Class 125 and as required to match the valve to which it connects. The valve shall be vented by installing one inch (1") schedule 40 pipe to the nearest sanitary sewer manhole. The one-inch (1") pipe shall be installed to a minimum grade of one-eighth inch (1/8") fall from the valve to the manhole.

624.02.9.2 - Accessories. Each valve shall be constructed to permit the flushing out of any sediment, which may settle or otherwise impede the operation of the valve.

All accessories including valves, rubber hoses, quick disconnect couplings and other equipment required for flushing out sediment and de-clogging orifices shall be furnished and assembled to the valve.

624.02.10 - Bedding Material. Aggregate bedding material shall meet the requirements of "Size II Stabilizer Aggregate of Section 907-304-1 or "Borrow Excavation" of Section 907-203-1. Bedding material is required where directed by the City Engineer or his authorized representative. For pipe diameters larger than 18", pipe bedding shall be in accordance with ASTM D2321 and aggregate bedding shall meet the requirements of "Size II Stabilizer Aggregate" of Section 907-304-1.

624.02.11 - Marking Tape & Locator Wire. Metallic marking tape shall be placed in all trenches at a depth of one foot (1') above sanitary sewer service lines, sanitary sewer gravity lines and sanitary sewer force mains. Tape shall be three inches (3") wide metallic tape with the words "CAUTION SEWER LINE BURIED BELOW" printed on it for all sanitary sewer service lines and sanitary sewer gravity lines, and "CAUTION FORCE MAIN BURIED BELOW" printed on it for all force main installations. No additional compensation will be allowed for this operation.

All sanitary sewer gravity lines, sanitary sewer force mains, & sanitary sewer services shall be installed with a fourteen (14) gauge solid copper insulated locator wire placed directly on the center of the sewer line for its entire length. Wire shall be tied to a step inside the sanitary sewer manhole and shall be a continuous piece of wire for its entire length. For sanitary sewer services and force

mains the locator wire shall be tied to an appurtenance at the start of the new service or main and shall be a continuous piece of wire for its entire length. The Contractor shall supply the splice kits and other accessories necessary for one continuous locator wire. No additional compensation will be allowed for this operation.

624.02.12 - Sewer Clean-out Plugs. All sanitary sewer clean-out plugs shall be brass with a countersunk nut as manufactured by Plumbest, "P51-600", or approved equal.

624.03 - Construction Requirements.

624.03.1 - Sewer Flow Control. The City will assist in lift station operations during work on the sewer system. The Contractor will not shutdown any pump stations in the collection system, if such is necessary, for the performance of this work. The Contractor shall notify the Owner who shall supply an operator for the lift station.

624.03.1.1 - Plugging or Blocking. When sewer line flows are low, lines may be blocked or plugged with City approval while work is performed on the lines. The Contractor is responsible for monitoring the effects of this blockage to prevent overflow of sewage and damage or inconvenience to the citizens.

624.03.1.2 - Bypassing-Pumping. When bypass-pumping from one manhole to the next, around a manhole or segment of force mains or portions of sewer lines to be replaced is required, the Contractor shall supply the necessary pumps, conduits and other equipment to divert the flow of sewage around the sewer section on which work is to be performed. The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate on a 24-hour basis and all engines shall be equipped with super silencers. The Contractor shall be responsible for correcting any problems that arise as a result of bypassing-pumping operations.

624.03.2 - Trenching. The Contractor shall comply with the sewer flow control requirements of Subsection 624.03.1 before conducting any trenching operations that cut into existing sewer lines or force mains.

Trenches shall be excavated only so far in advance of pipe removal and laying as to reveal obstructions, and shall be dug so that the existing pipe can be removed and, if applicable, the new pipe can be laid to the alignment and depth required. Excavation shall be done so as to provide a uniform and continuous bearing support for the pipe on solid and undisturbed ground at every point between bell holes. Bell holes shall be excavated at each joint to permit the proper joining of pipe sections. Where trench conditions are such that adequate support for the pipe cannot be obtained on the native material, aggregate bedding shall be used only with the approval of the City Engineer or his authorized representative, in accordance with Section 624.02.10 Pipe Bedding.

The width of the trench shall be ample to permit the existing pipe to be removed and the new pipe to be laid and jointed properly and the backfill to be placed and compacted as specified but in no case less than as follows:

Pipe Diameter	Minimum Trench Width
18” – 110”	Pipe O.D. +18”

For pipe diameters 18” and above, trench walls below the elevation of the pipe crown should be maintained as vertical as possible. A minimum of 6 inches of the select bedding material shall be provided under the pipe in accordance with Section 624.02.10 Pipe Bedding. Where unstable trench bottoms are encountered corrective action needs to be taken in accordance with the ASTM D2321 Section 7.2.2. Where excavation or caving causes excavation within the pipe zone to be wider than specified, the Contractor shall remove all loose and sloughed in material from the trench and replace with the select backfill material.

No greater length of trench shall be opened in advance of a completed pipeline nor left unfilled to the rear than shall seem proper to the City Engineer or his authorized representative. No trench shall be left without being backfilled at the end of a workday.

624.03.3 - Sheathing and Shoring. The Contractor shall place such sheathing and shoring in the trenches or utilize a trench box as may be necessary to properly support the trench walls and any adjacent structures. The type and amount of sheathing and shoring shall be such as the nature of the ground and attendant condition may require. It shall be the sole responsibility of the Contractor to provide such sheathing, shoring and bracing as may be required for the safe conduct of the work. The City Engineer or his authorized representative may, however, order the placement of sheathing, shoring or bracing if, in his opinion, it is required to properly execute the work in accordance with these specifications. No additional compensation will be allowed for this operation.

For pipe diameters 18” and above, shoring, sheeting or trench shields shall be utilized in such a manner as to minimize disturbance of the bedding material beneath the pipe crown. Whenever possible, trench support should not extend below the pipe crown. If trench support is necessary below the crown, it should either be left in place or consist of steel sheets ¾” thick or less which can be extracted with minimal disturbance. Dragging of a trench shield at pipe grade should only be done when it is demonstrated that such practices will not disturb the bedding, such as with the use of a compaction shield (or cut out section) at the trailing edge of the shield. If a trench shield inadvertently slips below the pipe crown it should be raised vertically and granular embedment materials should be placed and compacted in the void created by the shield.

No actions or instructions by the City Engineer or his authorized representative shall be regarded as his responsibility for the security of the trench or protection of workmen. The full responsibility shall remain with the Contractor.

624.03.4 - Dewatering. The Contractor shall keep all excavations free from water at his own expense while pipe laying is in progress and to such extent as may be necessary while excavation work alone is being carried on. He shall provide for the disposal of the water removed from

excavations in such manner as shall not cause injury to the public health, to public or private property, or to any portion of the work completed or in progress, or any impediment to the use of the streets by the public. No water shall be discharged into the sanitary sewer system.

624.03.5 - Pipelaying. Before sewer pipe is placed in position in the trench, the bottom and sides of the trench shall be carefully prepared, the required bedding placed, and bracing and sheeting installed where required. Pipe trenches shall be kept free from water during pipe laying, joining or before sufficient backfill has been placed to prevent flotation of the pipe. The trench shall be excavated to the dimensions shown on the drawings. Trench bottoms found to be unsuitable for foundations after pipe laying operations have started shall be corrected and brought to grade with approved materials. Each pipe shall be accurately placed to the line and grade called for on the drawings.

Except as otherwise provided in these specifications, all pipe and fittings shall be installed in accordance with the manufacturer's recommendations. PVC pipe shall be installed in accordance with the pipe manufacturer's installation manual. All sewer pipe and specials shall be carefully inspected before being laid and no cracked, broken and/or defective pipe or special shall be used in the work. Each piece of pipe shall be sounded before being placed in the line. The outside of the spigot, the inside of the bell, and any couplings used shall be brushed and wiped clean and dry and free from all foreign matter before the pipe is joined. No connection shall be made where joint surfaces and joint materials have been soiled by earth or embedment in handling until such surfaces are thoroughly cleaned.

The pipe and fittings shall be so laid in the trench that after the invert thereof shall conform accurately to the grades and alignment established by the construction drawings. At any stage of construction of a straight stretch between two consecutive manholes the zero or starting end of the pipe shall be clearly visible on looking through the pipe from the other end, with the full cross-section of the interior of the pipe in clear view.

After the pipe has been laid in the best material available from excavation in the immediate vicinity of where the pipe is being laid, the excavated material shall be used to backfill around and over the pipe in a manner specified in Subsection 624.03.8. For pipe diameters 18" and above, backfill material placed under the haunches shall be shovel sliced or compacted depending on class of embedment. If, in the opinion of the City Engineer or his authorized representative, material suitable for bedding the pipe is not available where pipe is being laid, suitable material may be ordered hauled in.

Each newly made joint will be inspected and if it is not found to be satisfactory, the last laid length of pipe shall be removed at once. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. If the pipe laying crew cannot put the pipe into the trench and in place without getting earth into it, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During the laying operations, no debris, tools, clothing or other materials shall be placed in the pipe.

At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other method approved by the City Engineer or his authorized representative. This provision shall apply during the noon hour as well as overnight. If water is in the trench, the seal shall remain in place until the trench is completely dry.

Cutting of pipes for inserting fittings or closure pieces shall be done in a neat and workmanlike manner in accordance with instructions of the pipe manufacturer and without damage to the pipe.

Pipe laying shall proceed upgrade, starting at the lower end of the grade and with the bells uphill.

624.03.6 - Sewer Service Lines. New six-inch (6") diameter PVC sewer service lines shall be installed from the wyes in all existing and in all new sewer mains. They shall be installed from the main to the right-of-way of the new streets to replace each existing service line and each new service line. Additional services can be installed as indicated on the plans or as authorized by the City Engineer or his authorized representative. Unless otherwise directed or permitted by the City Engineer or his authorized representative, new service lines shall follow the line and grade of the existing service, which will, in most cases, ensure removal of the old services from the ground. All existing service lines shall be removed upon installation of the new service. Removal of existing service lines shall be included in the cost of the installation of the new service line.

The depth of the service line at the point of connection for each property owner shall be sufficient to permit connection to the existing private sewer lines at a minimum grade of one-eighth inch (1/8") per foot.

The Contractor shall verify house connections during excavation. The installation of new service lines to accommodate future development may be directed by the City Engineer or his authorized representative.

All sewer service lines shall join the main sewer at a wye. Wyes shall be placed at all existing service locations. When the installation of a service line connection to an existing PVC main is required by the City Engineer or his authorized representative, the use of an approved saddle type connection will be permitted. All metal parts on saddle type connectors must be stainless steel. Lateral connections to PVC profile wall pipe shall be Inserta-tee or approved equal.

New clean-outs shall be installed on all new service lines in accordance with the details on the plans. A brass clean-out plug with countersunk nut shall be installed at all clean-outs. Sewer clean-outs located in unpaved areas shall have a 24-inch by 24-inch by 4-inch thick concrete pad placed around the cleanout in accordance with the detail on the Drawings. In the event that a sewer clean-out location is in a driveway, parking lot, etc., the Contractor will install a cast iron clean out cover which shall be East Jordan Iron Works (EJIW) Model V-1610-1 or an approved equal.

Prior to installing storm drains, the Contractor shall verify sewer lateral locations and grades. Should a service tie-in conflict arise due to the new storm drain, the Contractor shall install

additional sanitary sewer pipe to tie the services into. In the event that a sanitary sewer service conflicts with an existing or proposed storm drain line, the sewer service shall be rerouted over or under the storm drain, whichever will allow the proper flow from the clean-out to the main. This includes the lateral and parallel sewer if necessary. If rerouting is not possible, the Contractor shall contact the City Engineer or his authorized representative to discuss alternate methods to resolve the problem. This additional work shall be paid for under the line item for sanitary sewer main or service whichever is applicable. Any of the above additional work shall be subject to the approval of the Engineer.

Sewer service lines shall be connected to existing private lines at the property line with an approved adapter. Contractor shall notify the sewer customer when he will be changing out the sewer service line and approximately how long it will take. Lines installed for future use shall be plugged with an approved adapter, which can be removed without damage to the pipe bells.

The Contractor shall mark the face of the curb with an "S" stamped into the wet concrete where the curb is finished over the sewer service and shall keep construction records showing all lines, fittings, taps, etc., with sufficient data to accurately located these items after the trench has been backfilled. In the event of a failure, by the Contractor, to accurately locate all items listed herein, the Contractor will be held responsible in relocating these items at his own expense.

624.03.7 - Connection to Existing Manholes. When removing sewer lines, the Contractor shall break out the existing sewer at all manholes and grout a new gasket in the manhole wall. The new sewer pipe shall be installed after the grout has been given sufficient time to set up. The Contractor shall repair any damage done to the invert of the existing manhole at his own expense.

New manhole connections to precast concrete baes can be made with elastromeric gasket seals such as ALOK or Press Seal PSX. Connections to poured in-place manholes shall use manhole adapters or waterstops.

For pipe diameters 18” and larger connections to existing manholes shall be made by cutting a hole in the wall of the existing structure, inserting a length of PVC solid wall pipe into the hole, filing around the pipe with non-shrink grout, and troweling the inside and outside surfaces of the joint to a neat finish. New manhole connections to precast concrete bases can be made with elastomeric gasket seals such as ALOK or Press Seal PSX. Connections to poured in-place manholes shall use manhole adapters or waterstops.

624.03.7.1 – Connection to Existing Pipes, Large Diameter Pipe. Connections to existing lines shall be made by coupling a piece of PVC profile wall pipe to the existing line with an appropriate adapter by the pipe manufacturer.

624.03.8 - Backfilling Trenches. Backfilling shall be made with the material excavated from the trench provided that the excavated material is suitable for backfilling. Suitable materials shall be construed as material that will compact readily when the usual methods of mechanical tamping are used.

All backfill material shall be free from cinders, ashes, roots, refuse, vegetative matter, excess organic material, rocks, stones or other unsuitable materials.

All trenches shall be backfilled immediately after the pipe has been laid and inspected. Backfilling shall include the refilling and compaction of the fills in the trenches or excavation to the exiting ground surface or to the existing road subgrade.

Existing/native material shall be utilized as backfill wherever possible. In the event that existing material is unsuitable for backfill, borrow material may be used. This borrow material must be from a pre-approved source. The placement of borrow material must be approved by the City Engineer or his authorized representative. The excavation and disposal of unsuitable material shall be measured and paid for as Excess Excavation.

Where the depth of cover is twenty-five (25) feet or less, pipe bedding and backfill material within the pipe zone for 18” – 54” pipe shall be defined as that portion of the pipe zone which extends from 6” below the bottom of the pipe to a point 12” above the top of the pipe. Where depth of cover exceeds twenty-five (25) ft., the pipe zone shall extend to 18” above the top of the pipe. Prior to laying the pipe the foundation materials shall be trimmed to grade, such that each pipe section is fully supported along the entire length of the pipe barrel.

When backfilling within the pipe zone, special care shall be exercised not to cause settlement or lateral movement. To safeguard against movement of pipelines or structures, the Contractor shall place the backfill in small layers and shall thoroughly compact each layer with hand-operated, power-driven vibrating compactors to obtain the specified density.

All trenches shall be backfilled by hand or by approved mechanical methods from the bottom of the trench to a depth of one foot (1') above the pipe with fill placed in layers of six inches (6") and compacted by tamping to ninety-five percent (95%) density in accordance with ASTM D 1557, so as to ensure that the backfill is well placed and compacted beneath the haunches of the pipe. Backfilling material shall be deposited in the trench for its full width of each side of the pipe, fittings, and appurtenances simultaneously. Care shall be exercised to prevent distortion or damage to the pipe. The Contractor shall use special care in placing this portion of the backfill so as to avoid injuring or moving pipe.

From one foot (1') above the pipe to the grade shown on the drawings or specified herein, the trench shall be backfilled in layers which do not exceed eight inches (8") before compaction and shall be compacted with approved mechanical equipment to ninety-five percent (95%) density in accordance with ASTM D 1557, unless approved otherwise by the City Engineer or his authorized representative. Heavy compaction equipment shall not be used closer than 2 ft. to the top of the pipe.

The City Engineer or his authorized representative shall have the right to forbid the use of any compacting tools or machines that he considers dangerous to the pipe or incapable of compacting the backfill properly.

The Contractor shall take random density tests in the trench lines to assure that proper compaction has been achieved.

Where any sheathing or bracing is withdrawn as the backfilling progresses, all voids or spaces left thereby shall be carefully and thoroughly filled and compacted with properly shaped tools.

After completion of backfilling, all materials not used therein, including any excess excavation shall be removed and disposed of and all roads, shoulders, and other places in the line of work shall be left free, clean and in good order.

624.03.09 – Pipe Tunnels and Casing. The pipe should not rest on the bell as it is pushed into the casing. Casing spacers shall be used to raise and support pipe lengths in the casing. A casing spacer shall be aligned with the second assembly mark to prevent over-insertion into the bell.

624.03.10 - Sewer Line Inspection. The Contractor shall conduct an infiltration or air test for leakage as determined by the Engineer. Testing shall be conducted in accordance with all applicable safety standards. Infiltration shall not exceed twenty-five (25) gallons per twenty-four (24) hours per inch of diameter per mile of sewer. Contractor shall furnish all supplies, materials, labor, services, etc., needed to perform the test. No separate payment will be made for equipment, supplies, material, water, or services. Any leakage, including active seepage, shall be corrected where such leakage exists until the pipelines meet the requirements of the allowable leakage specifications. Infiltration tests shall be made when groundwater level is 18” or more above the top of the outside of the pipe.

Each section of sewer between two or more manholes shall be tested in accordance with ASTM F 1417, “Recommendation Practice for Low Pressure Air Testing of Installed Sewer Pipe.” If any test fails to meet the established requirements the cause shall be determined and corrected if necessary.

All new sewer lines shall be "lamped" between manholes. The Contractor shall provide mirrors, adequate battery operated lights and other necessary equipment and personnel to make this inspection.

All new PVC sewer lines shall be tested for diametric deflection by the Contractor at his expense using a GO-NO-GO type mandrel as manufactured by Hurco Technologies, Inc. or approved equal. The mandrel shall have an outside diameter of not less than ninety-five percent (95%) of the PVC pipe inside diameter. Deflection of PVC pipe after installation and backfill shall not exceed five percent (5%). Pipe found to be deflected more than five percent (5%) shall be replaced at the Contractor’s expense. This testing shall be accomplished prior to final acceptance and after all of the sewer pipe has been completely installed, backfilled, and in place for thirty (30) calendar

days. For pipes >18", mandrel shall be constructed of one-half inch (1/2") thick angle iron and #4 steel bars (ASTMA-15) welded to steel pipe. The mandrel design shall be approved by the City Engineer or his authorized representative.

Upon completion of "lamping" and mandrel test, the Contractor shall video all new sewer mains and sewer services on the project after a minimum of thirty (30) calendar days from installation. The Contractor shall give a copy of the video to the City Engineer or his authorized representative for review and approval of the new sewer lines and services prior to the installation of road subbase. The Contractor shall make arrangements for the City Engineer or his authorized representative to be present to witness the "lamping", mandrel test, and making of the video.

In the event that any imperfection in any of the new sewer lines or services is discovered during the 'lamping", mandrel test or review of the video, the Contractor shall correct the problem(s) immediately at his own expense. Once the Contractor believes the problem(s) has been corrected, the entire section(s) of pipe (i.e. manhole to manhole) containing the imperfection(s) shall be re-lamped, re-mandreled and re-videoed following all the same requirements as imposed for the original testing. This procedure shall be repeated until the pipe segment(s) is approved for acceptance by the City Engineer or his authorized representative. All cost incurred for correcting problems and re-testing shall be the responsibility of the contractor.

624.03.10 - Parallel Installation. All proposed sewer lines, sewer services and sewer force mains shall be laid at least ten feet (10') horizontally from any existing or proposed water main or service. The distance shall be measured edge to edge. Any deviations must be approved by the City on a case-by-case basis, if supported by field data.

624.03.11 - Crossings. Sewer services and sewer force mains crossing water mains or water services shall be laid to provide a minimum vertical distance of eighteen inches (18") between the outside of the water line and the outside sewer line. Special structural support for the water and sewer pipes may be required. Any deviation must be approved by the City on a case-by-case basis, if supported by field data.

624.03.12 - Air Release Valve Installation. The Contractor shall keep construction records showing the profile of the new force main. Air release valves shall be installed wherever the profile indicates a peak in the grade of the force main. Installation shall be in accordance with the details on the plans.

624.03.13 – Force Main Pressure Tests. The sections and complete sewer force main shall be subjected to pressure tests conforming with AWWA Standard C-600-87, Section 4 and shall successfully pass the leakage test as determined by the following formula:

$$L = \frac{SD(8.66)}{133{,}200}$$

Where:

L = allowable leakage, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches

The test pressure shall be seventy-five pounds per square inch (75 psi). The duration of the test shall be at least four (4) hours

624.04 - Method of Measurement. Measurement for sewer items will be measured in place, by length in linear feet along the centerline of each line from the center to center of the intersecting line or to the farthest extent of terminal fittings with no deductions for valves, fittings, etc. Excavation, dewatering, backfilling, thrust blocks, PVC fittings, "Megalug" retainer glands shall be measured by the pound from the dimensions and shipping weights shown on the submittals and paid as ductile iron fittings in accordance with Special Provision 907-604-1. Ductile iron fittings will be measured by the pound in accordance with 907-604-1. Marking tape, locator wire, concrete clean-out pads, bypassing, sheathing and shoring will not be measured separately, but shall be absorbed as a part of the item of the sewer main furnished and installed.

Aggregate for pipe bedding, if ordered by the City Engineer or his authorized representative, will be measured by volume in cubic yards in accordance with 907-304-1 or 907-203-1.

If existing/native material is used as backfill, there shall be no additional payment for excavation and backfill. If existing material is unsuitable for backfill, borrow material may be used. This borrow material must be from a pre-approved source. Approved placement of borrow will be measured by volume in cubic yards in accordance with 907-203-EX. The excavation and disposal of the unsuitable material shall be paid for as Excess Excavation and measured by volume in cubic yards in accordance with 907-203-G.

The clean-outs shall be measured as linear feet of sewer service lines. Brass clean-out plugs will not be measured for separate payment but shall be included in the unit price bid for sewer service lines.

Stamping service line and valve locations in curb will not be measured for separate payment.

Standard and high traffic clean-out covers will be measured by the pound and paid as castings in accordance with Special Provision 907-604-1.

"Megalug" retainer glands shall be measured by the pound from the dimensions and shipping weights shown on the submittals and paid as ductile iron fittings in accordance with Special Provision 907-644-1. Ductile iron fittings will be measured by the pound in accordance with 907-644-1.

Ductile iron fittings will be paid for at the contract unit price per pound in accordance with 907-644-1, which shall be full compensation for completing the work. Standard or full size ductile iron

fitting weights (in accordance with AWWA C110) were used to calculate the quantity listed in the bid proposal.

Bypass pumping, pressure testing, plugging and blocking will be considered subsidiary obligations of the Contractor and will not be measured for separate payment.

Air release valves will be measured per each complete in place. The manhole, casting, stabilizer aggregate, saddle, valve, one inch (1") and two inch (2") PVC pipe will not be measured separately, but shall be included as a part of the air release valve furnished and installed.

Mandrel testing, "lamping" and making video of new sewer lines shall not be measured for separate payment. The cost thereof shall be absorbed in the bid price per linear foot of new sewer line.

624.05 - Basis of Payment. This work will be paid for at the contract unit prices per unit specified, complete in place, which shall be full compensation for completing the work. Materials or work for which a pay item is not included and are necessary to complete the work under this section shall be furnished or performed and shall be considered incidental to the completed construction.

Payment will be made under:

907-624-A:	___" PVC SDR-26 Sanitary Sewer Main	-per linear foot
907-624-B:	___" Ductile Iron Sanitary Sewer Main	-per linear foot
907-624-C:	___" PVC Sanitary Sewer Force Main	-per linear foot
907-624-D:	___" Ductile Iron Sewer Force Main	-per linear foot
907-624-E:	6" PVC SDR-26 Sanitary Sewer Service	-per linear foot
907-624-F:	Air Release Valve	-per each
907-624-G:	____" Large Diameter PVC Gravity Sanitary Sewer Main (PS-115)	-per linear foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-626-10 **CODE: (IS)**

DATE: **07/03/2017**

SECTION: THERMOPLASTIC TRAFFIC MARKINGS

Subsection 626.05 - Basis of Payment.

After the last pay item listed, add the following:

907-626-AA: 6" Thermoplastic Traffic Stripe (Skip White)
(_____) - per mile
Thickness

907-626-BB: 6" Thermoplastic Traffic Stripe (Continuous White)
(_____) - per mile
Thickness

907-626-CC: 6" Thermoplastic Edge Stripe (Continuous White)
(_____) - per mile
Thickness

907-626-DD: 6" Thermoplastic Traffic Stripe (Skip Yellow)
(_____) - per mile
Thickness

907-626-EE: 6" Thermoplastic Traffic Stripe (Continuous Yellow)
(_____) - per linear foot or mile
Thickness

907-626-FF: 6" Thermoplastic Edge Stripe (Continuous Yellow)
(_____) - per mile
Thickness

907-626-GG: Thermoplastic Detail Stripe (6" Equivalent Length)
(_____) (_____) - per linear foot
Color Thickness

907-626-HH: Thermoplastic Legend (White)
(_____) - per square foot or linear foot
Thickness

CITY OF BILOXI

SPECIAL PROVISION NO. 907-627-1 **CODE: (IS)**

DATE: 07/03/2017

SECTION 627 – RAISED PAVEMENT MARKERS

Subsection 627.03.2 – Construction Details:

Insert the following paragraph after the last paragraph of Subsection 627.03.2.

> Two-Way Blue Reflective Raised Markers shall be placed in the center of the lane nearest to and directly perpendicular from each fire hydrant, unless otherwise directed by the City Engineer or his Authorized Representative.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-644-1 **CODE: (IS)**

DATE: 05/15/2023

SECTION 644 - WATER MAINS AND APPURTENANCES

644.01 - Description. The work covered by this section consists of furnishing all labor, equipment and materials and performing all operations in connection with the installation of potable water lines, as indicated on the drawings and as specified herein. The work includes clearing, grubbing, trenching, bedding, pipe laying, backfilling, pipe fittings, valves, hydrants, and all incidental items including testing and disinfection of the completed water lines, which are necessary for installation of the mains and connections to hydrants and existing mains and meters.

644.02 - Materials.

644.02.1 - Bedding Material. Aggregate bedding material shall meet the requirements of "Size II Stabilizer Aggregate" of Section 907-304-1 or "Borrow Excavation" of Section 907-203-1. Bedding material is required where directed by the City engineer or his authorized representative.

644.02.2 - Concrete. Concrete for use in thrust blocks and valve box slabs shall be non-reinforced and shall have a minimum 28 days compressive strength of 3000 psi.

644.02.3 - Polyvinyl Chloride (PVC) Pipe. PVC water lines 4 inches through 12 inches shall be "Blue Brute" (blue in color), or an approved equal, Class 235, DR 18 polyvinyl chloride pipe manufactured in accordance with AWWA C-900 (latest edition) and shall be U.L. listed. PVC water lines 14 inches through 48 inches shall be "Big Blue" (blue in color), or approved equal, Class 235, DR 18 polyvinyl chloride pipe manufactured in accordance with AWWA C-905 (latest edition) and shall be U.L. listed. Pipe shall be furnished in standard lengths (minimum 20 feet) with integrally cast bells or couplings using elastomeric gaskets that meet the requirements of ASTM D 3139 and F-477. All necessary adapters for connection to fittings shall be provided.

644.02.4 - Ductile Iron Pipe. Ductile iron pipe shall be designed in accordance with AWWA Specification C150 and manufactured in accordance with AWWA Specification C151. Joints shall conform with AWWA Specification C111 or C115 as applicable and shall be of the push on or mechanical type except where flanged joints are indicated on the plans. Ductile iron pipe 4" and less in diameter shall be of thickness Class 51 and pipe 6" and greater in diameter shall be of thickness Class 50 except pipe with threaded flanges shall be Class 53.

644.02.4.1 – Polyethylene Encasement. Provide 8 mil minimum thickness polyethylene encasement (wrap) on all buried ductile iron pipe, fittings, and accessories in accordance with AWWA C105 (ANSI A21.5). Polyethylene encasement material shall consist of three layers of co-extruded linear low density polyethylene (LLDPE), fused into a single layer. The inside surface of the polyethylene wrap shall be infused with an anti-microbial biocide to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic

corrosion. The color shall be white. Product and manufacturer shall be V-Bio® Enhanced Polyethylene Encasement, or approved equal. Polyethylene encasement wrap shall be included in the cost of the installation of the ductile iron water pipe.

644.02.5 - Fire Hydrants. Hydrants shall be three-way Clow Medallion, Meuller Super Centurion 250, or approved equal with five and one-quarter inch (5 1/4") valve opening. The length of the lower barrel on each hydrant shall be appropriate for the depth of the water main. The color shall be safety yellow 10-56 Rus-Kil or approved equal.

Hydrants that are installed or have been taken out of service shall be completely covered and identified as being "NOT IN SERVICE" until approved for use or removed from the site. "NOT IN SERVICE" bags shall be N.I.S. bags as manufactured by Assured Flow Sales, Inc. or approved equal. N.I.S. bags shall be 27" x 42" and made of 4 mil polypropylene material orange in color and in bold print clearly state in contrasting color "NOT IN SERVICE". "NOT IN SERVICE" labeling shall be visible from all sides. Ties straps shall be provided to firmly secure bags to hydrant and approved prior to use.

644.02.6 - Water Valves. Water valves shall be resilient seat gate valves complying with the requirements of AWWA C509 "Standard Specifications for Gate Valves for Ordinary Water Service" or AWWA C515 "Standard for Reduced Wall, Resilient Seated Gate Valves for Water Supply Service". Valves shall be Mueller or approved equal. Valves shall be furnished with a non-rising stem and shall open by turning the operating nut counterclockwise. Valve ends shall be flanged or mechanical joint, as appropriate for the connection. Mechanical joints shall be recommended by the manufacturer for use with AWWA C-900 PVC or ductile iron pipe and shall be furnished with MJ retainer glands.

All buried valves shall be fitted with a Telescopic Extension Stem within the valve box. The insert shall be one complete assembled unit composed of a ductile iron square nut, a self-adjusting extension arm, stop collar, anti-friction disk, housing adapter, a valve box centering ring, and a wrench nut coupler welded to the telescoping stem (bottom piece). The Telescopic Extension Stem material shall be (square-solid bar) Carbon Steel with black enamel coating. The valve box top section shall be sized to fit inside of the upper section of a standard Valve Box, allowing clearance for a 5 ¼ inch drop lid.

The extension stem assembly shall be of a telescoping design that allows for lengths of between 3 feet and 10 ½ feet from guard to the base of the 2-inch square wrench nut of a buried valve. The extension stem shall be capable of surviving a torque test to 300 ft-lb without failure. Telescopic Valve Extension Stem (Square) shall be by Trumbull Industries, Inc. or approved equal. All Telescopic Extension Stem assemblies shall be include with the unit price of each buried valve installed and accepted by the Owner.

644.02.6.1 – Insertion Valve. Insertion valve (12 inches or less) shall be fully functioning, resilient wedge gate valve capable of installation under pressure complying with the requirements of AWWA C515. Insertion valves shall be Hydra-Stop, "Insta-Valve 250", or approved equal.

Insertion valves shall be furnished with a non-rising stem operating counterclockwise. The body, bonnet, and valve stem shall be 304 stainless steel. Wedges shall be resilient seat complying with AWWA C506 and be fully encapsulated with EPDM rubber. Rated working pressure shall be 250 psig. End connections for buried valves shall be permanently restrained to the pipe. Tapping machine shall be capable of removing the complete coupon from the host pipe. Upon installation of the insertion valve body on to the existing pipe, a pressure test of 1.1 times that of the contents shall be sustained for 15 minutes. Once the pressure test is affectively achieved, the insertion valve body must not be moved in accordance with AWWA Standards. If the insertion valve is moved, the pressure test must be completed again. The insertion valve must not be moved or repositioned once the pressure test is achieved.

Insertion valve (16 inches and larger) shall be fully functioning, resilient wedge gate valve capable of installation under pressure complying with the requirements of AWWA C515. Insertion valves shall be Team Industrial Services, “Insert Valve”, or approved equal. Insertion valves shall be furnished with a non-rising stem operating counterclockwise. The body and bonnet stem shall be ductile iron with NSF 61 Epoxy. Wedges shall be resilient seat (shall seat on valve when closed, not on host pipe). Rated working pressure shall be 250 psig. End connections for buried valves shall be mechanical joint permanently restrained to the pipe. Tapping machine shall be capable of removing the complete section of pipe.

644.02.7 - Valve Boxes. Except where concrete valve boxes are indicated on the plans, valve boxes shall be of cast or ductile iron as manufactured by Mueller, Kennedy, M & H or approved equal. Covers shall be cast or ductile iron with a designation of "WATER" embossed on the topside and shall be of the screw down type. Valve boxes shall be the two-piece type, adjustable in length and suitable for installation in roadway surfaces. Stack pipe for valve box adjustment shall be Class 150 DR 18 manufactured in accordance with AWWA C-900 PVC or ductile iron pipe. Adjustment risers shall be cast iron and approved prior to use by the City Engineer or his authorized representative.

644.02.8 - Fittings. Fittings for water mains of six inch (6") diameter and larger shall be seal coated cast iron or ductile iron with flanged or mechanical joint ends, as appropriate for each connection. Mechanical joints shall be recommended by the manufacturer for use with AWWA C-900/C-905 PVC or ductile iron pipe and shall be furnished with MJ retainer glands. Standard fittings shall be manufactured in accordance with AWWA C110 and compact fittings in accordance with AWWA C153. Fittings for use with ductile iron pipe may be of the push-on type. Fittings for connections between new main and existing mains and pipes shall be specifically designed for interconnection of the lines being joined and will be subject to the approval of the City engineer or his authorized representative.

The Contractor shall make every effort to limit the number of fittings installed along the mainline as well as at lateral connections. The excessive use of bends to route water main connections up, over and around obstructions will not be allowed. The Contractor shall immediately correct any sections of main or connections the City Engineer or his Authorized representative deems unacceptable.

If an unavoidable situation occurs where the Contractor must install an excessive number of fittings, in the opinion of the City Engineer or his Authorized Representative, the Contractor shall immediately alert the City Engineer or his Authorized representative via a Request for Information (RFI) with complete details (i.e. plans, pictures, elevations, distances, dimensions, etc.) of the issue at hand. The City Engineer and his Authorized representative will work with the Design Engineer and Contractor to provide a resolution.

644.02.9 - Corporation and Curb Stops. Corporation stops at the main and curb stops at the meter shall be Ford or approved equal of the type and size to fit the particular water service. All new corporation and curb stops shall be low lead brass.

644.02.10 - Water Service Tubing. Water service tubing shall be polyethylene "PE" tubing having copper tube O.D. sizes and complying with ASTM D2737, SDR 9, 200 psi as manufactured by Driscopipe or approved equal. The use of metal inserts in the tubing will not be permitted. Splicing of water service tubing shall NOT be allowed.

644.02.11 - Water Meters. New water meters will not be furnished and installed as part of this Contract. The existing water meters will be removed and reinstalled in new water meter boxes at the right-of-way line. The Contractor shall coordinate with the City to confirm that all existing meters, including radio transceivers, are operational after they have been reinstalled. Any existing water meter assemblies (i.e. the meter, sensor, transceiver, connections, etc.) damaged during construction shall be replaced by the Contractor in kind at no additional cost in accordance with the City's Standards. The Contractor is responsible for ensuring that all meters reinstalled are operational. There is no separate payment for this work.

A standard residential water service shall have a $^5/_8$ inch x $^3/_4$ inch Sensus SRII Low Lead Water Meter (PD 320). Water meters 1½ inch – 2 inch in size shall be Sensus Omni-R^2 (SP-W-OMR-00-0611-01-A) and water meters over 2 inches shall be Sensus Omni C^2 (DS-W-OMR-02-0611-01-A). The size of the meter shall be determined by the size of each individual service as determined in the field. Each meter is equipped with a Sensus FlexNet SmartPoint M2 Model #520M – Pit Set (AMR-337) radio transceiver (attached to the meter lid) that interacts with one or more Tower Gateway Base Stations.

644.02.12 - Water Meter Boxes. When the contract calls for replacement of existing water meter, the Contractor shall also replace existing meter boxes. Meter boxes located outside of pavement shall be replaced with a standard high density polyethylene (HDPE) meter box as manufactured by Carson (Model No. 10152026) or approved equal. The meter box shall have minimum dimensions of 20 inches x 16 inches (at the bottom) with a height of 12 inches. Meters boxes located in driveways, parking lots, sidewalks, etc., shall be a heavy walled box as manufactured by Carson (MSBCF-1015XL Series, Model No. 10152022) or approved equal.

All meter boxes shall have blue lids. The meter lid shall have a 1.75 inch diameter hole and 4.5 inch recessed hole on top to accommodate the pit set noted above in Section 644.02.11. The maximum pit lid thickness shall be 1.75 inches. The lid/cover for a standard box located outside of pavement shall be as manufactured by Carson (AMR 4.5 Recessed Hole HDPE Model No.

14194295). Lids for meter boxes located in driveways, parking lots, sidewalks, etc. shall be a heavy walled as manufactured by Carson (Model No. 10154129).

644.02.13 – Filter Fabric. Geotextile fabric shall be non-woven, needle punched, and weigh a minimum of eight ounces (8 oz.) per square yard, as manufactured by Terratex Construction Fabrics, "NO8", or approved equal.

644.02.14 – Line Stop. The line stop pay item shall include all components required to plug an existing water main so that a newly installed and tested water main can be connected to the existing main currently under pressure. The line stop will allow this connection to occur without the disruption of pressure or service to the existing main upstream of the line stop. Each line stop shall include the following components: Linestop nozzle with closure plug, gate valve (which is paid for separately under Pay Item 907-644-E), housing unit, high-pressure jackscrew actuator with folding line stop head and miscellaneous gaskets, seals, etc. required to accommodate the line stop operation as shown on the plans.

644.02.15 – Temporary Bypass. If required, the temporary bypass shall include constructing a temporary water line within the area where the existing water main is to be adjusted. Each temporary bypass shall include the following components: (1) two tees, (2) temporary water main (3) ductile iron fittings required for the temporary water main and (4) restraints, thrust blocks, etc. required to accommodate the bypass operation. If required, the temporary bypass operation shall work in conjunction with the line stopping operation.

644.02.16 – Automatic Flusher. If required, automatic flushers shall be installed and, if needed, relocated as directed by City of Biloxi Public Works to prevent stagnation of potable water in newly constructed water mains. Automatic flushers shall be Eclipse #9700 by Kupferle, or approved equal. Contractor shall provide Flusher with Sampling on a fire hydrant.

A 2-1/2" NST Swivel connection shall lead into a 2" automatic flushing valve. The flushing valve shall control the flow of water through the hydrant and its diaphragm with the extension and retraction of a DC latching solenoid and have a 220 PSI rating. Each unit shall be furnished with a stand-alone valve controller. The valve controller will not require a second hand-held device for programming. Controller must have a minimum of 12 possible flushing cycles per day. Controller shall be submersible to 12 feet, and operate with a 9-volt battery, and have resin-sealed electrical components. The solenoid shall have no loose parts when removed from the valve.

All components shall be housed in a lockable powder coated (red or yellow) aluminum enclosure, with ¾" perforations in the floor to diffuse flushing water. A removable floor plate shall allow access to a 2" FIP outlet if needed. Contractor to provide and install a collar lock to cover the 2-1/2" swivel for prevention of tampering with the device. A diffuser shall be provided and installed thru the removable access plate to allow directional flow of flushed water.

644.03 - Construction Requirements.

644.03.1 - Trenching. Trenches shall be dug so that the pipe can be placed at the alignment and depth required. The trench shall be so braced and drained that workmen may enter and work safely and efficiently. Discharge from dewatering pumps shall be conducted to natural drainage channels, drains or storm drainage system. No water shall be discharged into the sanitary sewer system.

The Contractor shall confine his excavation to the least width that will allow the easy installation of the water main and fittings. An open trench in advance of pipe laying operations at the close of the workday will not be permitted.

Where elevations or profiles are shown on the plans, pipes shall be laid to the depth so indicated. When elevations or profiles are not shown, and unless otherwise indicated on the drawings, pipes shall be laid to such depths as will provide for a minimum cover of two foot six inches (2'-6").

644.03.1.01 – As-Built Water Main Location and Elevation. The Contractor is required to survey the horizontal and vertical location of the new water main as the new main is installed. Locations and elevations shall be provided along the main line (at appropriate intervals to clearly define the alignment of the new main), as well as, at all bends, tees, valves, etc. This information shall be included on the monthly redlines submitted with pay requests as well as incorporated into the Contractor's Final As-built Drawings.

644.03.2 - Pipe Bedding. Where trench conditions are such that adequate support for the pipe cannot be obtained on the native material, aggregate bedding material shall be used with the approval of the City engineer or his authorized representative.

644.03.3 - Sheathing and Shoring. The Contractor shall place such sheathing and shoring in the trenches as may be necessary to support properly the trench walls and any adjacent structures. The type and amount of sheathing and shoring shall be such as the nature of the ground and attendant condition may require. It shall be the sole responsibility of the Contractor to provide such sheathing, shoring and bracing as may be required for the safe conduct of the work. The City engineer or his authorized representative may, however, order the placement of sheathing, shoring or bracing if, in his opinion, it is required to properly execute the work in accordance with these specifications. No additional compensation will be allowed for this operation.

No actions or instructions by the City engineer or his authorized representative shall be regarded as his responsibility for the security of the trench or protection of workmen. The full responsibility shall remain with the Contractor.

644.03.4 - Dewatering. The Contractor shall keep all excavations free from water at his own expense while pipe laying is in progress and to such extent as may be necessary while excavation work alone is being carried on. He shall provide for the disposal of the water removed from excavations in such a manner as not to cause injury to the public health, to public or private property, or to any portion of the work completed or in progress, or any impediment to the use of the streets by the public. No water shall be discharged into the sanitary sewer system.

644.03.5 - Pipe Laying. Proper implements, tools and facilities shall be provided and used by the Contractor for the safe and convenient prosecution of the work. All pipe, fittings, valves and appurtenances shall be carefully lowered into the trench, piece by piece by means of ropes or other suitable tools or equipment in such a manner as to prevent damage to materials and protective coatings and linings. Under no circumstances shall materials be dropped or dumped into the trenches.

All pipe, fittings, and appurtenances shall be inspected for defects and cracks prior to being lowered into the trench.

The outside of the spigot, the inside of the bell and any couplings used shall be brushed and wiped clean and dry and free from all foreign matter before pipe is joined.

Every precaution shall be taken to prevent foreign material from entering the pipe while it is being installed. If the pipe laying crew cannot put the pipe into the trench and in place without getting earth into it, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During the laying operations, no debris, tools, clothing or other material shall be placed in the pipe.

After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home and brought to correct line and grade. The pipe shall be secured in place with approved backfill material tamped under it as herein specified. Precautions shall be taken to prevent dirt from entering the joint space.

At times when pipe laying is not in progress, the open ends of pipe shall be closed by watertight plug or other means approved by the City engineer or his authorized representative. This provision shall apply during the noon hour as well as overnight. If water is in the trench, the seal shall remain in place until the trench is pumped completely dry.

Cutting of pipes for inserting fittings or closure pieces and to bring fittings, valves and hydrants to designated locations shall be done in a neat and workmanlike manner in accordance with instructions of the pipe manufacturer and without damage to the pipe.

All pipe and fittings shall be installed in accordance with the manufacturer's recommendations. PVC pipe shall be installed in accordance with applicable AWWA Specifications and the pipe manufacturer's installation manual. Ductile iron pipe shall be installed in accordance with AWWA C600. The Contractor shall have copies of this AWWA Specifications and the installation manual available on the project at all times.

644.03.6 - Water Service Connections. At all locations within the right-of-way limits of the project where existing water services are in place, the Contractor shall provide new corporation stops and polyethylene service lines between the new main and the water meters to replace the existing service lines. New service lines shall be of equal size as the existing service lines, but no less than one-inch (1”), unless otherwise specified on the plans or as directed by the City engineer or his authorized representative. Additional lines shall be installed for future use as directed by

the City engineer or his authorized representative or as indicated on the plans. A residential single service line shall be a minimum of one-inch (1”). A residential double service line shall be either one and one-half inch (1 ½”) or two-inch (2”), as appropriate, or as directed by the City engineer or his authorized representative.

Water services shall be installed in accordance with the recommendations of both the pipe main manufacturer and the service line manufacturer.

All new and replacement service lines shall extend from the water main to the meters in the meter boxes which are generally located near the back of the sidewalk. The existing meter box shall be replaced with a new box at the right-of-way line and the existing meter reinstalled in the new box. All new and replacement service lines shall be one continuous piece of tubing without any couplings from the main to the meter. All service lines shall be installed directly from the main to the meter and shall cross the street at right angles to the main. Where required by note or as directed in the field, water meter boxes shall be relocated to the street right-of-way line.

There may be instances where the existing meter/meter box is located outside of the right-of-way near a house, building, etc. In this instance, the water service shall be replaced and reconnected from the new main to the back of the existing meter. The old meter and box is to be removed. A new meter box shall be installed at the right-of-way line and the existing meter reinstalled in the new box.

A minimum of three (3) City working days notice shall be given to the City so a press release can be given to notify water system customers of a cut off and an approximate time that will be required for connection of the new water service.

The time required for change out of an existing water service to the new water system shall be kept at minimum. No service shall be left off overnight.

Service lines shall have at least twenty-four inches (24") cover as measured from the completed roadway and sidewalk surfaces. Service lines may be installed in narrow trenches at the required depth.

New service lines which are not tied into a meter during construction shall terminate at a meter box at the right-of-way line. The proper stop valves will be installed on the line as necessary to protect the system. This work shall be coordinated with the City Engineer or his authorized representative.

The Contractor shall mark the face of the curb with a "W" stamped into the wet concrete where the curb is finished over the water service and shall keep construction records showing all lines, fittings, valves, taps, etc., with sufficient data to accurately locate these items after the trench has been backfilled. In the event of a failure, by the Contractor, to accurately locate all items listed herein, the Contractor will be held responsible in relocating these items at his own expense.

644.03.7 - Backfilling Trenches. Backfilling shall be made with the material removed from the trench or excavation, provided that the excavated material is suitable for backfilling. Suitable material shall be construed as material that will compact readily when the usual methods of mechanical tamping are used. All backfill material shall be free from cinders, ashes, roots, refuse, vegetable matter, excess organic material, rocks, stones, or other unsuitable materials.

Existing/native material shall be utilized as backfill wherever possible. In the event that existing material is unsuitable for backfill, borrow material may be used. This borrow material must be from a pre-approved source. The placement of borrow material must be approved by the City Engineer or his authorized representative. The excavation and disposal of unsuitable material shall be measured and paid for as Excess Excavation.

All trenches shall be backfilled by hand or by approved mechanical methods from the bottom of the trench to a depth of one foot (1'-0") above the top of the pipe with fill placed in layers of six (6") inches and compacted by tamping to 95% density in accordance with ASTM D 1557, so as to insure that the backfill is well placed and compacted beneath the haunches of the pipe. Backfill material shall be deposited in the trench for its full width of each side of the pipe, fittings and appurtenances simultaneously. Care shall be exercised to prevent distortion or damage to the pipe. The Contractor shall use special care in placing this portion of the backfill so as to avoid injuring or moving pipe.

From one foot (1'-0") above the pipe to the grade shown on the drawings or specified herein, the trench shall be backfilled by hand or by approved mechanical methods and compacted in layers which do not exceed eight inches (8") to 95% density in accordance with ASTM D 1557, unless approved otherwise by the City Engineer or his authorized representative in non-paved areas.

The City engineer or his authorized representative shall have the right to forbid the use of any compacting tools or machines that he considers dangerous to the pipe or incapable of compacting the backfill properly.

The Contractor shall take random density tests in the trench lines to assure that proper compaction has been achieved.

Where any sheathing or bracing is withdrawn as the backfilling progresses, all voids or spaces left thereby shall be carefully and thoroughly filled and compacted with properly shaped tools.

After completion of backfilling, all materials not used therein, including such earth that cannot be properly rounded up over the refilled excavation, shall be removed and disposed of and all roads, shoulders, and other places in the line of the work shall be left free, clean and in good order.

644.03.8 - Thrust Blocks. Thrust blocks shall be installed at each change of direction of twenty two and one-half (22 1/2) degrees or more, at tees and at dead ends. Thrust blocks shall be made with non-reinforced concrete and shall have dimensions not less than those shown on the drawings. The thrust blocks shall be of sufficient size to resist the force resulting from the flow of water through the type of fitting to be blocked.

644.03.9 - Restraints. Each fitting, valve, hydrant, etc. shall be restrained with the appropriate size "Megalug" retainer gland.

Where indicated of the drawings, metal harnesses or metal tie rods shall be used in addition to retainer glands and thrust blocks. The harness assembly shall be of adequate strength to prevent movement of the fittings being restrained.

All harness assemblies and the tie rods installed shall be hot dip galvanized in accordance with ASTM A123.

644.03.10 - Connections to Existing Mains. Connections to existing mains shall be made at the locations shown on the plans. These connections shall be made without interrupting service in the existing lines unless circumstances make this type of connection impractical. Where it is necessary to interrupt the water service, these connections shall be made under the direct supervision of a representative of the City. The City shall determine the time at which these connections shall be made, and shall approve the operation of all valves on the existing system, and any operations, which might affect the potability of the water.

The Contractor shall at no time operate any valve on the existing system except with the direct authorization of the City.

Where a tie-in is to be made to an existing pipe or fitting, the Contractor shall excavate and expose the existing fitting or main, in order to ascertain its correct location and elevation. This excavation can then be backfilled until the tie-in is made. No additional compensation will be allowed for this operation.

644.03.11 - Setting Hydrants. Hydrants shall be located as shown on the plans or as directed by the City engineer or his authorized representative in a manner that will provide complete accessibility and prevent the possibility of damage from vehicles or injury to pedestrians. All hydrants shall be set plumb. Each hydrant shall be connected to the main with a six-inch (6") branch line. All hydrant caps shall be removed and greased with AWWA approved grease. After installation, all hydrants shall be tested for satisfactory operation.

Minimum height of hose nozzles shall be eighteen inches (18”) above ground surface (or anticipated future ground surface) as shown on the plans.

Before ordering new hydrants, the Contractor shall determine the barrel length required for all hydrants on the project, both new and relocated. New hydrants shall be ordered in barrel lengths as needed to place a hydrant at each designated location on the project.

Hydrants that are installed or have been taken out of service, shall be completely covered and identified as being “NOT IN SERVICE” until approved for use or removed from the site.

644.03.12 - Relocating Hydrants. Existing fire hydrants designated for relocation shall be carefully disconnected from the existing water main and shall be installed at the locations and in conformance with the details for new hydrants that are shown on the plans.

A new gasket and restraint clamp shall be provided for connection of the hydrant to the main. Existing mechanical joint or flange bolts may be reused if they are in satisfactory condition.

After installation is complete and before acceptance of the project, all relocated fire hydrants shall be cleaned and given one coat of suitable paint, safety yellow 10-56 Rus-Kil or approved equal, as directed by the City engineer or his authorized representative.

Prior to disconnection of existing hydrants, the Contractor shall notify the City Fire Chief's office and give pertinent information as to when and where the hydrant will be relocated.

644.03.13 - Setting Valves and Valve Boxes. Valves shall be installed with stems vertical. All valves not shown on the plans to be located in a concrete vault shall be provided with cast iron valve boxes as a means of protecting and permanently locating the operating nut on the valve. The top of the valve box shall be installed flush with the ground or roadway surface and shall be supported by a suitable foundation. Valve boxes shall be installed where a valve wrench can fit straight over the operating nut. If stack pipe is used, joints formed between the stack pipe and the valve and the stack pipe and the bottom of the valve box, shall be rapped with geotextile fabric in accordance with the details. Geotextile fabric shall be held in place by a suitable means as approved by the City Engineer or his authorized representative until backfill is complete. Width of the fabric shall be a minimum of two feet (2') centered over the joint, unless directed otherwise by the City Engineer or his authorized representative and length shall be suitable to wrap around the joint and overlap one-third the circumference of the joint.

If new water valve boxes need to be adjusted after installation one of the following methods shall be used for the adjustment:

(a) If threaded adjustment is available, the threaded pieces of the valve box shall be adjusted to the proper grade.
(b) If the valve box is to be raised less than three inches (3") and no threaded adjustment is available, risers shall be added to the valve box.
(c) If the valve box is to be raised more than three inches (3") and no threaded adjustment is available, the stack pipe shall be removed and replaced with the proper length pipe for the new grade.
(d) If the valve box is to be lowered and no threaded adjustment is available, the stack pipe shall be cut to proper length for the new grade.

The adjustment of casting for new water valves shall include the plumbing and centering of the valve box, riser and stack pipe on the valve nut. A valve wrench shall be used prior to acceptance of adjustment of casting to verify compliance with requirements stated in this section

of the specification. There shall be no separate payment for adjustment of new water valve boxes.

All valves located outside walk and pavement areas shall be provided with concrete slabs. The concrete slab shall be two feet (2') square by four inches (4") thick.

The Contractor shall mark the face of the curb with a "V" stamped into the wet concrete where the curb is adjacent to water valves. If the valve is located within the limits of the street, each adjacent curb shall be marked with a “V” at the location of the valve. If the valve is located outside of the street, the adjacent curb shall be mark with a “V” at the location of the valve. The contractor shall keep construction records showing location of valves with sufficient data to accurately locate the valve after construction.

644.03.14 - Pressure Tests. The sections and complete pipe line shall be subjected to pressure tests conforming with AWWA Standard C-600-87, Section 4 and shall successfully pass the leakage test as determined by the following formula:

$$L = \frac{SD(12.25)}{133{,}200}$$

Where:

L = allowable leakage, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches

The test pressure shall be one hundred fifty pounds per square inch (150 psi). The duration of the test shall be at least four (4) hours.

644.03.15 - Testing Hydrants. After the pressure and leakage tests have satisfactorily completed, the Contractor shall remove all hydrant caps (hose nozzle caps and pumper nozzle caps) and grease the nozzle threads. The hydrant caps shall be replaced and the main hydrant valves shall be fully opened. All hydrants shall be required to withstand the same pressure test as described in Subsection 644.03.14 without leakage.

644.03.16 - Sterilization. After the water main has been completed and a satisfactory hydrostatic test has been made, the Contractor shall sterilize the water mains. The Contractor shall submit the method and/or individual who will provide the chlorination service for prior approval by the City engineer or his authorized representative. Mains shall be thoroughly flushed before introduction of the chlorinating materials. All new mains and repaired portions of or extensions to, existing mains shall be chlorinated so that a chlorine residual of not less than twenty-five (25) PPM (Parts Per Million) remains in the water after twenty-four (24) hours standing in the pipe. Granular chlorine shall not be applied in the new main, fittings, services, etc. All chlorinating materials shall be in a liquid or gas form.

644.03.16.1 - Rate of Application. Water from the existing distribution system or other source of supply shall be controlled so as to flow slowly into the newly laid pipeline during the application of chlorine. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall produce a residual of at least twenty-five (25) PPM after twenty-four (24) hours standing. This may be expected with an application of fifty (50) PPM, although some conditions may require more.

644.03.16.2 - Prevention of Reverse Flow. Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supply water. Check valves may be used if desired.

644.03.16.3 - Retention Period. Treated water shall be retained in the pipe long enough to destroy all non-spore-forming bacteria. This period shall be at least twenty-four (24) hours and should produce a residual not less than twenty-five (25) PPM at the extreme end of the retention period.

If the circumstances are such that a shorter retention period must be used, the chlorine concentration shall be increased accordingly. For instance, for a contact period of one (1) hour, a one hundred (100) PPM chlorine concentration is required. Under these conditions special care shall be taken to avoid attack in pipe, valves, hydrants and other appurtenances.

644.03.16.4 - Chlorinating Valves and Hydrants. In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.

644.03.16.5 - Final Flushing and Testing. Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipeline and its extremities until the replacement water throughout its length shall, upon test, be proved comparable in quality to the water served the public from the existing water supply system and approved by the public health authority having jurisdiction. This satisfactory quality of water delivered by the new main should continue for a period of at least two (2) full days as demonstrated by laboratory examination of samples taken from a tap located and installed in such a way as to prevent outside contamination.

644.03.16.6 - Repetition of Procedure. Should the initial treatment fail to result in the condition specified, the original chlorination procedure shall be repeated until satisfactory results are obtained. All testing shall be at no additional cost to the City.

644.03.16.7 - Bacteriological Sampling:

New Water Mains. After completion of the construction and disinfection of water distribution, the Contractor shall arrange for at least one sample to be collected, on two (2) consecutive days, in accordance with the latest Mississippi State Department of Health guidelines from every dead end line and every major looped line for bacteriological examination. A representative of the Department shall be present when the samples are collected. The samples shall be collected by the registered engineer in charge of the project, the water supply system's certified operator, or a

representative of the Mississippi State Department of Health. Water being collected for testing shall not have a chlorine residual higher than is normally maintained in other parts of the distribution system. No chlorine shall be present which is a result of line disinfection. Less than one (1) coliform bacteria per one hundred (100) milliliters (ml) and no confluent growth indication shall constitute a satisfactory sample when analyzed by the Mississippi Department of Public Health Laboratory or a laboratory certified by the Mississippi State Department of Health.

Boil Water Notices. The Contractor must follow the *Mississippi Department of Health Guidelines for Issuing a Boil Water Notice*. The Health Department Standards define the number of samples required per day for the impacted area based on the number of service connections affected. In order for a boil water notice to be lifted, the minimum number of samples per day must pass all testing for two (2) consecutive days. The required sampling shall begin as soon as possible and continue as long as required. Samples may have to be taken for several days in a row before two (2) consecutive days of samples test clear. Do not take samples for two days and wait to see if the results are clear. The Contractor shall keep sampling every day while the testing takes place. The boil water notice cannot be lifted until these tests have passed. The Contractor shall coordinate with the testing laboratory to collect the samples and run the tests as soon as possible (and test continuously) to ensure that boil water notices can be lifted as soon as possible. This is particularly important when a boil water notice impacts a large area, business, casino, etc.

644.03.17 - Marking Tape & Locator Wire. All water lines and service lines must be installed with a non-corrosive metallic tape placed directly over and on the center of the facility at a depth of one foot (1’) over the line for its entire length. Tape must be connected to all facilities or appurtenances. The tape shall have a three-inch (3") width and the words "Buried Waterline" should be printed on it along its entire length. Tape shall be Detect tape as manufactured by the Allen Systems, Inc., which is handled by the Mavor Kelly Company in New Orleans or approved equal. No additional compensation will be allowed for this operation.

All water mains and services shall be installed with a fourteen (14) gauge solid copper insulated locator wire placed directly on the center of the main for its entire length. Wire shall be tied to an appurtenance at the start of the new main and shall be a continuous piece of wire for its entire length. The Contractor shall supply the splice kits and other accessories necessary for one continuous locator wire.

644.03.18 - Parallel Installation. Water mains and services shall be laid at least ten feet (10') horizontally and eighteen inches (18”) vertically from any existing or proposed sewer main or service. The water main shall be installed above the sanitary sewer. The distances shall be measured edge to edge. Any deviations must be approved by the City on a case-by-case basis, if supported by field data.

644.03.19 - Crossings. Water mains and services crossing sewers shall be laid to provide a minimum vertical distance of eighteen inches (18") between the outside of the water main and the outside of the sewer. The water main shall be installed above the sewer main. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible.

Special structural support for the water and sewer pipes may be required. Any deviation must be approved by the City on a case-by-case basis, if supported by field data.

644.03.20 – Line Stop Procedure. The line stop procedure is a general approach only. Actual implementation means and methods are the responsibility of the Contractor and shall be submitted to the Engineer and/or his authorized representative prior to commencement of the work.

The Contractor shall clean the exterior of the main to remove debris, corrosion deposits and other surface irregularities that might interfere with proper seating and sealing of the line stop fitting against the main.

The line stop fitting shall be a split mechanical bolt-on type, fabricated from ASTM A-36 carbon steel, epoxy coated, with 18-8 type 304 stainless steel nuts, bolts, and washers, and be complete with equalization fittings, blind flange with gaskets, nuts and bolts. Flanges are to be AWWA 207 Class D, ANSI 150# drilling. Gaskets are to be compounded for use with water, salt solutions, and mild acids.

Line stop fittings installed on slip joints or mechanical joint pipe shall require that at least three standard lengths of pipe remain buried from the point of the line stop to where the line will be cut open. An alternative method is to anchor the line stop fitting with concrete. Line stop fittings shall be installed and pressure tested at 150 psi for 15minutes prior to tapping the main.

Concrete support/anchor shall be installed after pressure test. Concrete support should extend to the “BEAM POINT or CENTER LINE” of the pipe main. This method should prevent movement laterally where the line is isolated and cut open.

Temporary line stop valve is installed into the line stop fittings (flanged tee may be mounted to the valve for temporary bypass). Drilling machine is mounted to line stop valve, and the wet tap is performed.

Coupon from the tap is retracted into the machine, stop valve is closed, drilling machine is depressurized and removed. Coupon is measured to verify pipe I.D. for sizing adjustments of the folding head stop sealing element.

Line stop machine is mounted on stopping valve and line stop assembly, valve is opened, and assembly enters the pipe and the line stop is performed.

Pipe main is de-pressurized and alterations/reconnections can now begin.

After alterations/reconnections are completed, and the new line has been sanitized, the line stop is repressurized, and the stopper head is removed from the line stop and the valve is closed.

Drilling machine with closure plug is mounted to stop valve. Valve is opened and the assembly is installed and locked into position inside the neck of the stop fitting.

The drilling machine is then removed, and blind flange is installed to the line stop fitting for completion of the job.

644.04 - Method of Measurement. Water lines of the size specified will be measured in place, by length in linear feet along centerline to each line from center to center of intersecting lines or to the farthest extent of terminal fittings with no deductions for valves, fittings, etc.

The Contractor will NOT be compensated for any water main piping until the new water line has been installed, pressure tested, chlorinated, bacteriologically tested and placed into service.

Fire hydrants will be measured per fire hydrant assembly. The fire hydrant assembly shall consist of the hydrant, anchoring tee, M.J. gate valve (6" minimum), retainer glands (as required), C-900 pipe (6" as required). The water line from the main to the 6" M.J. gate valve will be measured for separate payment and shall be paid for under the appropriate pay item(s). The labor and materials necessary to paint relocated hydrants and new hydrants will not be measured for separate payment but shall be included in the unit price bid for the new hydrant or the relocation of the existing hydrant.

Measurements to fire hydrants will stop at the vertical axis of the hydrant. Excavation, dewatering, marking tape, locator wire, blocking, thrust blocks, backfilling and tie-ins for water lines will not be measured for separate payment but shall be included as a part of the item of water line, fire hydrant assembly, fitting or service line furnished and installed.

The labor and materials necessary to paint relocated hydrants and new hydrants will not be measured for separate payment but shall be included in the unit price bid for the new hydrant or the relocation of the existing hydrant.

No payment for water service lines shall be made until City of Biloxi has inspected and accepted the completed Work. Payment for water service tubing shall be measures as a straight, horizontal line from the water main to the point of connection to the water meter connection. Service will NOT be paid for until the mainline has been placed into operation and services are activated.

Meter relocation, meter boxes, reinstallation of the existing meter in the new meter box and any other fittings required will not be measured for separate payment but shall be included in the cost of service lines. The Contractor shall take care to ensure that the existing meters are reinstalled correctly and are operational. The Contractor shall immediately correct any issues with meters being installed backwards, wires disconnected, damaged, etc.

Aggregate bedding, if ordered by the City engineer or his authorized representative, will be measured by volume in cubic yards in accordance with 907-304-1 or 907-203-1.

If existing/native material is used as backfill, there shall be no additional payment for excavation and backfill. If existing material is unsuitable for backfill, borrow material may be used. This borrow material must be from a pre-approved source. Approved placement of borrow will be

measured by volume in cubic yards in accordance with 907-203-EX. The excavation and disposal of the unsuitable material shall be paid for as Excess Excavation and measured by volume in cubic yards in accordance with 907-203-G.

Stamping service line and valve locations in the curb will not be measured for separate payment. The stamping shall take place while the curbs are being installed.

All pressure testing, flushing and sterilization of new water lines shall be done by the Contractor and will not be measured for separate payment. These costs shall be included in the contract unit bid prices for water line items.

Water valves will be measured by the number and size of units as specified.

"Megalug" retainer glands shall be measured by the pound from the dimensions and shipping weights shown on the submittals and paid as ductile iron fittings. Fittings will not be paid for until the water main has been placed into service.

Tapping materials, corporation stops, curb stops, reducers, and other fittings used on service lines will not be measured separate payment but shall be included in the unit price bid for service lines.

Hot-tap and valve connected thereto shall be measured by the specified size of the hot-tap and valve. Both tapping sleeve and valve along with labor and other incidentals required to make the hot-tap shall be included in the bid price of the item.

Valve boxes shall be measured by the pound from the dimensions and weight shown on the submittals and paid as castings in accordance with Special Provision 907-604-1. Filter fabric shall not be measured for separate payment.

Line stops shall be measured per each, and shall include all items (with the exception of gate valves) described in Subsection 644.02.14. If required, bypass procedure shall include all items described in Subsection 644.02.15. Separate payment will not be made for temporary water main, fittings, etc.

There shall not be separate payment for adjustment of new water valve boxes, the cost therefore shall be absorbed in other pay items. For adjustment of existing water valve boxes, see Section 613-1, "Adjustment of Castings, Gratings, and Utility Appurtenances" of this specification.

644.05 - Basis of Payment. The prices thus bid shall be full compensation for completing the work specified. Materials or work for which a pay item is not included and are necessary to complete the work under this section shall be furnished or performed and shall be considered incidental to the completed construction.

Payment will be made under:

907-644-A: ___" C-900 PVC Water Main -per linear foot

907-644-B: ___” C-905 PVC Water Main	-per linear foot
907-644-C: ___" Ductile Iron Water Main	-per linear foot
907-644-D: ___" Diameter Water Service	-per linear foot
907-644-E: ___" Water Valve	-per each
907-644-F: ___" X ___” Hot Tapping Sleeve & ___" Valve	-per each
907-644-G: Fire Hydrant	-per each
907-644-J: Relocate Fire Hydrant	-per each
907-644-K: ____” Line Stop	-per each
907-644-L: ____” Insertion Valve	-per each
907-644-M: ____” Water Meter and Box (all sizes, depths, and types)	- per each
907-644-N: _____Ductile Iron Fittings	-per pound

CITY OF BILOXI

SPECIAL PROVISION NO. 907-648-1 **CODE: (SP)**

DATE: 07/03/2017

SECTION 648 - LOW PRESSURE PORTLAND CEMENT GROUT

648.01--Description. This work consists of the pumping of a grout mixture, at a low pressure, to fill voids around, under, or in pipe within the limits specified on the plans and as directed by the City Engineer or his authorized representative.

648.02--Materials. The grout used in the low pressure pumping shall be composed of Portland cement, concrete sand and water. Fourteen bags of Portland cement shall be used in each cubic yard of grout.

648.03--Construction Requirements.

648.03.1--Equipment. The equipment used in the work covered by this section shall be the Contractor's responsibility provided it is approved by the City Engineer or his authorized representative and the desired results are achieved.

648.03.2--Weather Limitation. Unless approved otherwise by the City Engineer or his authorized representative, grouting operations may not be started unless the ambient temperature is at least thirty five (35) degrees Fahrenheit and rising. Grouting shall be discontinued if the temperature is forty (40) degrees Fahrenheit and falling or when the surrounding earth contains an abnormal amount of moisture.

648.03.3--Preparation of Grout Mixture. Since the intent of the work is to pump as stiff a grout as possible at as low a pressure as possible to satisfactorily fill the voids, the City Engineer or his authorized representative reserves the right to require the Contractor to alter the consistency of the grout by the addition or deletion as deemed necessary.

648.03.4--Construction Details. Pumping equipment shall be so arranged that no vibrations result, which might damage freshly placed concrete. Pipes carrying cementitious material from the pump to the placing area should be laid out with a minimum of bends and with no unauthorized change in size. Where material is conveyed and placed by mechanically applied pressure, the equipment shall be suitable in kind and adequate in capacity for the work. The use of aluminum pipe as a conveyance for the cementitious material will not be permitted.

A cementitious material with coarse aggregate omitted shall be pumped through the equipment ahead of the regular concrete to provide lubrication to start pumping operations. This material shall not be used in placement. The lubrication operations are continuous.

The operation of the pump shall be such that a continuous stream of cementitious material without air pockets is produced. When pumping is completed, the material remaining in the pumping equipment, if it is to be used, shall be ejected in such a manner that there will be no contamination of concrete or separation of the ingredients.

Cementitious material shall be injected into the lowest point in the line segment to be filled, with displacement material being pumped to the highest point. Vents shall be placed at this point and at all other points where voids could form. As cementitious material is pumped past a vent point and all foreign materials have been displaced, the vent shall be capped below grade and abandoned. Once total void displacement has been achieved, foreign material has been removed from the existing pipeline, and the injected cementitious material is flowing freely from the highest vent point, the point shall be capped and pumping shall continue until a stabilized pressure has been established. Any deviation in this pressure shall be noticed and duly recorded by volume in relation to distance and density of displacement material.

When all foreign matter has been displaced from a vent point, said point shall be capped below grade and abandoned. Contractor shall schedule this operation with the City Engineer or his authorized representative.

Vents shall be installed on the existing drainage line in such a way as to prevent pumped material from leaking excessively. All excess pumped material will be removed from this area.

648.04--Method of Measurement. Measurement for this item will be by the cubic yard of grout pumped in place including mobilization and demobilization of the pumping equipment and operator, grout, vents, adaptors, caps, connections, plugs, testing, labor, materials, and other miscellaneous items required for the finished product.

The volume of grout will be computed as follows: the nominal cross-sectional area of the pipe (in square feet) times the length of pipe grouted (in feet) times one hundred ten percent (1.10) divided by twenty seven (27).

648.05--Basis of Payment. This work will be paid for at the contract unit price per cubic yard, complete in place, which shall be full compensation for completing the work.

Payment will be made under:

907-648-A: Low Pressure Portland Cement Grout -per cubic yard

CITY OF BILOXI

SPECIAL PROVISION NO. 907-649-1 **CODE: (SP)**

DATE: 08/15/2017

SECTION 649 – SEWAGE PUMPING STATION

649.01 - Description. The work covered by this section consists of furnishing all labor, equipment and materials and performing all operations in connection with the installation, rehabilitation and/or demolition of solids handling, submersible pumps, pump station, wetwell, valve vault, piping and valves per details as indicated on the plans and as specified herein. The work includes clearing, grubbing, dewatering, bedding, pipe laying, backfilling, testing, fittings, and appurtenances required for a complete installation.

649.01.1 - Manufacturer's Experience. It is the intention of this Specification to cover minimum acceptable quality equipment for a complete installation. The Equipment Manufacturer shall have not less than 5 successful years experience in the design, construction and operation of equipment of the type specified at a minimum of 5 different collection system entities.

The City Engineer may require evidence, in the form of operating records, from these collection system entities to substantiate any claims concerning the ability of the proposed sewage pumping equipment to perform as required.

649.01.2 - Supplier's/Manufacturer's Services. A supplier's and / or manufacturer's representative for the equipment specified herein shall be made available at the job site in the event of failure or other malfunction of the equipment or basin to verify the problem and take whatever action is necessary for correction thereof. The cost of this service shall be included in the pump supplier's cost.

Upon completion of pump station installation, a supplier's and/or manufacturer's representative for the equipment specified herein shall be made available at the job site for start-up, check-out, and testing of all pumps, controls, and other associated pump station equipment to the satisfaction of the Construction Manager, Owner, and the Engineer. The cost of this service shall be included in the pump supplier's cost.

649.02 - Materials.

649.02.1 - Pumping System. Contractor shall furnish all labor, materials, equipment and incidentals required to provide duplex pumping system as specified herein. The system shall consist of compatible pumps and controls so as to insure suitability and assurance in matching the equipment together. Submersible pump and motor shall be MudBug, or Owner approved equal.

System shall consist of submersible sewage pumps (solids handling), level control switches, discharge plumbing and valve vault and aluminum hatch, pump mounting support, and cord

sealing plate for conduit to panel; to be installed in concrete wetwell with an aluminum access cover. Structure and dimensions shall be as shown on drawings.

Each pump shall have a pumping capacity against a total head as shown on the drawings. Pump motor shall be 60 Hertz and to the horsepower, phase, voltage, and speed as shown herein and on the drawings.

Controls shall be detailed on the plans and per **SECTION 907-650-1** Duplex Pump Control Panel.

On sump level rise lower 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 first on next operation and become lead pump. If sump level continues to rise when lead pump is operating, override switch shall energize and start lag pump. Both lead and lag pump 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 and if level rises above override control, alarm shall signal. All level switches shall be adjustable for level setting, from the surface.

649.02.2 Pumps. Each pump shall be a non-clog submersible type, model as shown on the drawings, or an Owner approved equivalent. All openings in pump shall be large enough to pass a 3½" diameter sphere. Discharge flange shall be sized as shown on the drawings. The parts exposed to abrasive wear; case, impeller and wear-plates; shall be of all Cast Iron Class 30.

649.02.2.1 – Impeller. The pump impeller shall be of all Cast Iron Class 30 and recessed type. Impeller shall be dynamically balanced. Impeller shall be driven by stainless steel key, and impeller shall be held in position with lock screw and washer. Impeller and motor shall have top lift-out of case so that the assembly can be removed without disturbing any piping.

649.02.2.2– Pump Case. The volute case shall be of Cast Iron Class 30 and have a flanged center line discharge. Discharge flange shall be standard flange with bolt holes straddling center line.

649.02.2.3 Pump and Motor Casting. All castings shall be of high tensile strength cast iron. Castings shall be treated with phosphate and chromate rinse and shall be painted before machining. All machined surfaces to be exposed to sewage water shall be re-painted.

649.02.2.4 – Painting. The pumps shall be painted after assembly in accordance with the recommendations of the manufacturer.

649.02.2.6 – Spare Parts. A suggested spare parts list for pumps, drive systems, and special tools shall be furnished to the Owner by the pump supplier.

649.02.2.7 – Pedestal Mount. The pump manufacturer shall provide a common pump and motor base, constructed of 3/8 inch thick, minimum thickness, fabricated steel, suitably reinforced to

support the full weight of the pump and motor. The pedestal base shall include support legs of sufficient length to provide clear access to the suction port of the pump without impeding the flow of liquids and solids into the pump suction.

649.02.3 – Motors. This specification details the mechanical and electrical requirements for squirrel-cage induction motors, both single and three phase, designed for wet well submersible applications in water and sewage. It is the intent of this specification to define submersible premium quality motors which will provide efficient operation with high mechanical integrity under adverse operating conditions for maximum life and minimum life cycle costs. This specification covers sewage wet well applications defined by the National Electric Code as Class 1; Division 1, hazardous locations section 501-8(a) requiring explosion proof construction.

Motors covered by this specification shall conform to the latest applicable requirements of NEMA, IEEE, ANSI and NEC standards; shall be designed for continuous submerged duty in water and sewage, and minimum 15 minute duty continuous in air under full load operating conditions. Motors shall be three (3) phase rated 230/460, volts, based upon 40°C ambient conditions. Motor construction shall be designed to withstand 200 psi water pressure at all seal locations. Motors shall be furnished with Class F rated insulation materials or better; shall be rated as Class F, 1.15 service factor, Class 1 Groups C&D. Motors will be CSA (Canadian Standards Association) and U.L. (Underwriters Laboratories) approved and name plated accordingly and shall be manufactured in the United States of America. The ability to provide any/all replacement parts, engineering design support, complete dynamometer testing, and U/L rerate capability shall be provided domestically.

649.02.3.1 – Bearing and Lubrication. Bearings shall be ball, single row, deep groove, Conrad type, and shall have a Class 2 internal fit conforming to AFBMA Std. 20; shall be selected to provide minimum L10 rating life of 17,500 hours. The motor shall be designed to limit the bearing temperature rise to a maximum of 60°C under full load conditions. Motors shall be greased by the manufacturer with a premium moisture resistant polyurea thickened grease containing rust inhibitors and suitable for operation over a temperature range of -25°C to +120° C.

649.02.3.2 – Shaft Seal. Two independently-mounted mechanical face type seals shall be provided. The inner and outer seals shall be separated by an oil filled chamber. The oil shall act as a barrier to trap moisture and provide sufficient time for a planned shutdown. The oil shall also provide lubrication to the internal seal. Standard John Crane Type 21, Sealol type 43, or Sealol type 42, U/L approved seals shall be provided. The inner seal shall be provided with carbon rotating face and ceramic stationary face. The outer seal shall be provided with a solid tungsten carbide rotating face and a silicon carbide or tungsten carbide stationary face. The outer seal construction shall be designed for easy replacement. In compliance with U/L Standards for explosion proof motors, a flame path shall be provided by a labyrinth slinger in the bottom flange in order to prevent the ignition of ambient gases. Under such conditions the seal design shall allow for pressure relief across either seal face.

649.02.3.3 – Moisture Protection System. Dual (2) moisture sensing probes are to be provided that extend into the oil chamber located between the outer and inner seal and used to detect the

presence of moisture should the outer seal fail. The moisture protection system shall also be designed to detect water in the motor chamber and provide a warning signal prior to water levels reaching the bearing or wound stator assemblies.

649.02.3.4 – Cap/Cable Assembly. The power cable and cap assembly shall be designed to prevent moisture from wicking through the cable assembly even when the cable jacket has been punctured. Power and control cable entry into the lead connection chamber shall be epoxy encapsulated for positive moisture sealing. Compression type fittings or connectors shall not be considered equal. A Buna-N power and control cable grommet shall be provided in addition to the epoxy to the epoxy sealed leads.

649.02.3.5 – Enclosure and Shaft. The motor enclosure including: frame, end brackets, flange and cap assembly shall be cast iron, ASTM type A-48, Class 25 or better. Motor frame construction will not have fins and will be a smooth surface to prevent the clogging of solids and provide for easy cleaning. The top end bracket will include integrally cast provisions for vertical lifting capability. All mating frame fits to have rabbet joints with large overlap as well as O-ring seals for a water tight seal. O-rings shall be Buna-N (nitrile). Viton O-rings may be supplied as an option and are required for ambient conditions of 61° C and higher. Motor shaft shall be 416 stainless steel (303, 304, 410 stainless steel 17-4 PH, Carpenter 20, all types of Monel or Nitronic 50 stainless steel may be provided). All external hardware including the motor nameplate shall be made of stainless steel. Motor rotor construction shall be die cast aluminum or fabricated copper or their respective alloys. Rotors on frames 213T and above shall be keyed to shaft and rotating assembly dynamically balanced to NEMA limits per MG1-25.05. Balance weights if required, shall be secured to the rotor resistance ring or fan blades by rivets. Machine screws and nuts are prohibited. All exposed motor parts including frame, brackets, flange, and cap assembly shall receive an alkyd primer and epoxy ester finish coat of high grade paint to resist rust and corrosion.

649.02.3.6 – Electrical. All motors shall successfully operate under power supply variations per NEMA MG1-14.30. Motors shall be designed to limit the maximum surface temperature to NEC specifications for Division 1: Class 1, Group D, or Class 1, Group C & D for hazardous locations. All motors shall be NEMA design B. Motors shall have copper windings. Motor insulation system shall be Class F minimum, utilizing materials and insulation systems evaluated in accordance with IEEE 117 classification test. Motor leads shall be non wicking types, Class f temperature rating or better and permanently numbered for identification. Entire wound stator assembly shall receive a minimum of 2 coats of varnish applied using a dip and bake process. All motors to include 2 normally closed automatic reset thermostats connected in series and embedded in adjoining phases as required by Underwriters Laboratories for motors of 1 HP or higher. Each completed and assembled motor shall receive a routine factory test per NEMA and IEEE standards.

Each set of motor leads shall be tie wrapped and hung neatly and separate from each other and floats. Transducers shall be placed in still well. Still well shall be 2” Schedule 80 PVC, one continuous piece unless greater than 20 lf. Pipe shall rest on or near the bottom of wet well and fasten to wet well lip. Pipe is to be drilled at least every 6 inches on both side of pipe from bottom of pope up ¾ of the way to the top of the pipe with 5/16 inch holes. Terminations need to be wire to wire inside the J-Box mounted on the wet well. Do not use termination strip and pull the

transducer through the J-Box all the way back to control box with on splice and only 3 feet of rolled up slack in wet well once transducer has been set to proper height.

All conduits and fittings exiting the ground or concrete are to be rigid including conduit for ground wire and security light. Only security light conduit may be switched to PVC, EMT, or carflex after reading 3' above ground.

At least 3 conduits are to be run between control box and J-Box and wet well. All float wires are to be run in one conduit. All motor wires are to be run in one (or more) conduits and all transducer wires shall be run in a separate conduit. Pipe size chosen for each should not exceed ¾ fill of conduit capacity.

649.02.4 – Concrete Wetwell and Valve Vault.
The concrete wetwell shall be built with precast concrete materials and accessories shown on the plans. The barrel of the wetwell shall be constructed of sections of reinforced concrete pipe conforming to ASTM 3 Specification Designation C76, Class II. Concrete for pipe shall be Type II Portland Cement with 100 percent calcareous aggregate. The diameter, height, opening and other details shall be as shown on the Plans. Joints shall be made with rubber gaskets or an approved equal. All joints shall be wrapped tightly with Infi-Shield External Gator Wrap or approved equal. The wrap shall be overlapped a minimum of six inches (6"). Each section shall have not more than two holes for the purpose of handling. These holes shall be plugged with a non-shrink grout immediately after installation and covered with a minimum 9" x 9" patch of "Gator Wrap" or approved equal.

The valve vault, concrete slab and miscellaneous concrete items shall be constructed of concrete having the minimum compressive strength required at 28 days of 3,000 pounds per square inch. Field specimens and laboratory tests shall be made in accordance with the standards of the American Society of Testing Materials. The minimum amount of water shall be used to produce a workable mix and shall not exceed 6 U.S. gallons per sack of cement.

649.02.4.1 – Concrete Wetwell Surfacing and Lining. Provide and apply a minimum of 120 mils. of resinous (epoxy) surfacing/lining materials to the interior of the sewage pumping station wetwell. 100% Solids Epoxy Materials shall be in accordance with the Warren Environmental System P301/S301 (WES), COR-GARD® with ½" permacast MS-10,000 mortars, Strong Seal Epoxy Topcoat System, Strong Seal Urethane Coating System, SprayWall Urethane (SprayROQ) or approved equal. Strong Seal QSR is approved for patching and MS-2-(A & C) is approved for rehab in a non-corrosive environment only. The material sprayed onto the surface of the manhole shall be a 100% solids, low odor, amine cured epoxy. Application and minimum physical standards shall be as specified in Subsection 604.03.9 – 100% Solids Epoxy Liner.

649.02.4.2 – Covers. Covers shall be aluminum access hatch with externally operating locking devices. Access covers shall be sized for the wet well and/or the valve vault; the covers shall be manufactured by Halliday Products, Inc., Bilco, U. S. Foundry, Inc. or an Owner approved equivalent. Locking devices and hardware shall be a non-corrosive locking bar with a stainless

steel handle and hardware; said hardware shall be furnished with the access door. Design loading shall be 150 pounds per square foot, minimum.

649.02.5 – Submittals. A Schedule of Values, Operation and Maintenance Manuals, Installation Instructions, and Shop Drawings shall be submitted in accordance with these specifications.

The Contractor shall submit a Schedule of Values for the lump sum pump station item(s) to the City Engineer or authorized representative for review and approval within 10 days of award of contract. Once approved, the Schedule of Values will serve as the basis for monthly payments to the Contractor for this lump sum work.

The Schedule of Values shall contain a detailed breakdown, line-by-line, of the costs of the various components of any pump station work, including complete demolition, station rehabilitation and/or construction of entirely new facilities. The breakdown will include all individual labor and material line items. The breakdown of each lump sum bid item must cover the cost of construction required by the Contract Drawings and Documents for that item. The sum of the values for the construction activities associated with a particular lump sum bid item must equal the total lump sum bid amount for that item.

Shop Drawings for all pumps, drive motors and accessories shall be submitted to the Program Manager for distribution. The review and approval by the design engineer requires that the complete submittals include all make, size, style, model, capacity, weight and all other data required to show compliance with the requirements of the Plans and Specifications. The design engineers shall supply sufficient number of operating points along the pump system curve to indicate the operating condition(s) expected within the system. These should include a minimum of five (5) design points, including static head (0 gpm flow), a minimum of three (3) operating points along the system curve (static head plus headloss to yield total dynamic head), as well as the shut-off head condition. The design curves should also indicate the point at which the pump curve and the system curves intersect. This data is provided in the table below. Shop Drawings shall include performance curves of the pump unit showing capacity of pump at its motor speed or range of speeds from shut-off heads to minimum head, recommended head and capacity range for continuous operation of the pump, pump efficiencies, brake horsepower, NPSH requirements and solids handling capabilities. Shop Drawings shall include motor data noting horsepower, voltage, current, enclosure type, NEMA design, dimensions and all other data as required to show compliance with Specification requirements. Shop Drawings shall cover all items directly associated with the pump assembly.

Gallons per Minute (GPM)	Total Dynamic Head (TDH) in feet
0	

RPM = XXXX

Design Engineer to fill in the table and RPM above and remove this text from final spec.

Shop Drawings for wetwell, valve vault, control panel and elevated platform (where applicable) shall also be submitted to the City Engineer or authorized representative for distribution. The review and approval by the design engineer requires that the complete submittals include all items described in the specifications and the drawings for them. Information included with these submittals shall include but not be limited to the following: wetwell and valve vault structural drawing(s), wetwell and valve vault accessories, proposed wetwell gravity sewer invert(s) and force main invert elevations based on "cut sheet" calculations of the proposed gravity sewers, control panel features, control panel drawings, control panel equipment list, control panel accessories, control panel schematics, and any additional information to ensure compliance with these specifications and the contract drawings.

Instruction manual(s) for the operation of the pump station shall be compiled by the Contactor. Two (2) operation and maintenance manuals, all clean and unused, shall be delivered to the Program Manager for distribution to the Owner. These shall be complete in every aspect and cover all pumps, motors ancillary equipment and accessories at the start-up, operation and maintenance of the pump station. Each operation and maintenance manual will include parts lists of components, complete service procedures and a troubleshooting guide.

649.03 Construction Requirements. All excavation and backfill for the pump station wetwell and valve vault shall be performed in accordance with MDOT Section 203 and Special Provision No. 907-203-1**.** All equipment specified under this Section shall be installed in accordance with the manufacturer's recommendations. The pump station equipment, concrete wetwell, and concrete valve vault shall be installed in compliance with the pump station details as shown on the construction drawings. All precast concrete section work for the pump station wetwell and valve vault shall be performed in accordance with MDOT Section 604 and Special Provision No. 907-604-1. All concrete work for the concrete foundation pad of the concrete wetwell and valve vault shall be performed in accordance with MDOT Section 604 and Special Provision No.907-604-1.

649.03.1 – Testing.

649.03.1.1 – Factory Testing. The pump shall be visually inspected to confirm that it is built in accordance with the specification as to horsepower, voltage, phase and hertz.

The motor and seal housing chambers shall be hi-potted to test for moisture content and/or insulation defects.

Pump shall be allowed to run dry to check for proper rotation.

Discharge piping shall be attached; the pump submerged in water and amp readings taken in each leg to check for an imbalanced stator winding. If there is a significant difference in readings, the stator windings shall be checked with a bridge to determine if an unbalanced resistance exists. If so, the stator will be replaced and retested.

649.03.1.2 – Field Testing. The Contractor shall be responsible for providing water to the pump station for pump station testing.

Upon completion of pump station installation, a supplier's and/or manufacturer's representative for the equipment specified herein shall be made available at the job site for start-up, check-out, and testing of all pumps, controls, and other associated pump station equipment to the satisfaction of the Construction Manager, Owner, and the Engineer. The cost of this service shall be included in the pump supplier's cost.

649.04 - Method of Measurement. Measurement for sewage pumping stations, including demolition work, construction of new facilities and for pump station rehabilitation will be measured complete in place. Partial payments may be made to the Contractor based on the Schedule of Values submitted as required in Section 649.02.5. Excavation, dewatering, backfilling, thrust blocks, pipe, valves, fittings, pumps, floats, hatches, wire, stainless steel bolts/nuts/fittings, concrete slabs, "Gator Wrap", sheathing and shoring, removal of items from the wetwell, cleaning of existing wetwell, replacement of pump station lid/top (if applicable) and any other items shown on the lift station drawings for which a separate pay item has not been provided will not be measured separately, but shall be absorbed as a part of the lump sum item of the pump station demolition, construction or rehabilitation, furnished and installed. The cost of all testing and startup shall be included in the measurement for these lump sum items. Any fence and gate removal, new fencing and gates, concrete (around the station and/or for access driveways) with limestone base course and epoxy coating of wet well shall also be included as part of the lump sum item for pump station demolition, construction or rehabilitation, furnished and installed. The limits of said work shall be as delineated on the drawings.

All equipment testing, factory and field, equipment start-up, bypass pumping, pressure testing, plugging and blocking will be considered subsidiary obligations of the Contractor and will not be measured for separate payment.

"Size II Stabilizer Aggregate" for pipe bedding, if ordered by the Construction Manager or City Engineer or his authorized representative, will be measured by volume in cubic yards in accordance with 907-304-1 or 907-203-1.

649.05 Basis of Payment. This work will be paid for at the contract unit price(s) of lump sum, complete in place, which shall be full compensation for completing the work. Materials or work for which a pay item is not included and are necessary to complete the work under this section shall be furnished or performed and shall be considered incidental to the completed construction.

Payment will be made under:

907-649-A: Pump Station – New Construction	-per lump sum
907-649-B: Pump Station Rehabilitation	-per lump sum
907-649-C: Pump Station Demolition	-per lump sum

CITY OF BILOXI

SPECIAL PROVISION NO. 907-650-1 **CODE: (SP)**

DATE: 07/03/2017

SECTION 650 – DUPLEX / TRIPLEX PUMP CONTROL PANEL

650.01 - Description. The work covered by this section consists of furnishing all labor, equipment and materials and performing all operations in connection with the installation of a duplex/triplex pump control panel, control floats and elevated platform (if applicable) as specified herein and/or shown on the Drawings.

650.01.1 - Manufacturer's Experience. It is the intention of this Specification to cover minimum acceptable quality equipment for a complete installation. These Plans and Specifications were developed based upon a submersible solids handling sewage pump duplex controller as manufactured by Control Systems, Inc. The intent of the Plans and Specifications is to describe the required features, functions, and performance of the pumping system to be supplied. Bidder and pump system supplier shall familiarize themselves with the requirements of the project and the particulars of this installation. Any and all modifications or adjustments of any kind to any siting, foundation, piping, valving, electrical, controls, instrumentation and/or appurtenances of any nature that may be required to accommodate the particular sewage pump system manufacturer as proposed in any Bidder's Bid Proposal shall be included in the price bid therein. No additional compensation shall be paid for any accommodation of any particular sewage pump system supplier.

The Equipment Manufacturer shall have not less than 10 years successful experience in the design, construction and operation of electrical control equipment of the type specified. The City Engineer may require and Bidder shall provide certified documentation, satisfactory to the City Engineer, from the owner/operator of the equipment installations cited above to substantiate any claims concerning the ability of the proposed sewage pumping equipment to perform as required.

650.01.2 - Supplier's/Manufacturer's Services. The manufacturer of the pump controller package shall be a UL 508A Certified facility. Proof of label availability shall be provided with submittals.

The pump controller package shall be designed, constructed and tested in accordance with NEMA, NEC, IEC and UL 508A standards.

Prior to shipment, the pump controller package shall be functionally tested at the factory, as an assembled unit with motors connected to ensure proper sequencing and operation. All pilot devices and controls shall be tested to verify proper operation. Temperature tests shall be conducted to assure that internal enclosure temperatures are suitable for the installed components operating in the site environment. Documentation of the tests shall be furnished at the engineer's request.

650.02 - Materials.

650.02.1 – General Requirements. Enclosure shall be constructed of a minimum 14 gauge, type 304 stainless steel. Seams shall be continuously welded and ground smooth. Provide a seamless form-in-place gasket to assure water tight and dust tight seal. Provide a rolled lip around three sides of door and all sides of enclosure opening to exclude liquids and contaminants. Provide an internal 3-point latch and type 316L stainless steel padlocking "power glide" handle to assure security and a water-tight seal while still allowing convenient access. Door shall be removable by pulling a stainless steel continuous hinge pin. Enclosure shall be painted inside and out with white polyester powder to reduce absorption of solar radiation to keep internal components cool. The enclosure shall be rated NEMA 4X and be manufactured by Hoffman or approved equal. All operator devices including selector switches, pilot lights and meters shall be mounted on an interior deadfront panel. The deadfront panel shall be constructed of anodized aluminum with a continuous aluminum hinge to swing outward and allow access to the back panel. Provide a thermostatically controlled heater in the enclosure to reduce condensation in the enclosure. Also, provide a stainless steel automatic breather drain in the lowest part of the enclosure. The manufacturer shall size the enclosure to provide minimum wire bending spaces per N.E.C. requirements.

All power and control wires shall be stranded copper type MTW. All wiring bundles shall be in covered plastic wireway.

All points necessary for external connection in the controller, whether power or control shall be wired to a terminal strip located at the bottom of the enclosure. The terminal strip shall be permanently marked with the same designation as the wire connected to it. Provide neutral and grounding terminals.

All power and control wires shall be marked at both ends using self-adhering wire markers. No two wires having different functions within the control panel shall have the same markings.

All circuit breakers, starters, and other control devices mounted within the controller panel shall be labeled for identification both within the panel and on the wiring schematic with corresponding designations.

Control power shall be 120 volts and shall be protected by a correctly sized circuit breaker. If required, provide a properly sized control power transformer with primary over current protection.

Each starter shall be provided with overload protection in all three phases and each individual starter shall have phase failure protection.

All circuit breakers, selector switches, pilot lights and control devices shall be visible and operable from an interior dead-front panel. The dead-front panel shall be constructed of anodized aluminum and shall have a continuous aluminum hinge.

Provide a 15A, 120V duplex receptacle surface mounted in a metal outlet box on the back panel in the enclosure.

All drawings shall be prepared per J.I.C. standards and submitted prior to any fabrication of control equipment. The Controller shall be produced by a UL 508 listed shop. Proof of label availability shall be submitted with above drawing.

Provide enclosure with a properly sized main breaker. The breaker shall include a door mounted operator mounted on the deadfront panel. The operator shall prevent the deadfront panel from being opened with the breaker in the on position.

650.02.2 - Surge Protection Device (SPD). Provide a properly sized SPD to protect the components in the enclosure. The SPD shall be UL 1449 listed subject to IEEE C62.41 test standards for all category locations surge current rating of 100kA per phase and 50kA per mode minimum. Provide diagnostic indicator lights for each phase and a 20 amp, 240 or 480 volt (as required to match service entrance voltage) circuit breaker for disconnecting means.

650.02.2.1 – Motor Controllers with Across-the-line Starter. Provide a properly sized circuit breaker combination NEMA rated motor starter with NEMA Class 10, ambient compensated overload protection and individual phase failure protection. Across the line starters shall be required on 240V AC station with motors less than 15 horsepower and 480V AC station with motors less than 20 horsepower.

Overload relays shall be solid state Allen Bradley type E1 Plus or approved equal.

For UL listed combination starters, circuit breaker shall be a motor circuit protector type with instantaneous trip only.

Minimum NEMA rated starter size shall be Size 1.

650.02.2.2 – Motor Controllers with Solid State Starters. Provide a solid state starter for each pump motor. The solid state starter shall come complete with a shorting contactor and overload protection. Solid state starters shall be required on 240V AC stations with motors 15 horsepower and larger and 480V AC stations with motors 20 horsepower and larger.

The solid state starter shall be provided with a pump control option, and other features as found in the Allen Bradley SMC Flex soft starter or approved equal.

632.02.2.3 – Duplex Pump Controller Module Features and Functions. Provide a Duplex Pump Controller Module to control two single speed pumps with features and function of the Model DC201B made by Control Systems, Inc., Jackson, MS including the following features:

632.02.2.3.1 – Operators and Front Panel Indicators (for each pump)

Manual-Off-Automatic selector switch
Green "Pump Running" pilot light
Red "Pump Failure" pilot light
Red "Pump Seal Failure" pilot light

632.02.2.3.2 – A Pump NO.1 LEAD – ALTERNATE – Pump NO.2 LEAD sequence selector switch to select either pump as lead pump or to select that the pumps alternate as lead pump on each call for cycle.

632.02.2.3.3 – Signal inputs for stop, lead pump start, lag pump start, and high/low alarm. The sensors shall be optically isolated and operate on 24V DC with a maximum current of 16 mA for intrinsic safety.

632.02.2.3.4 – Pilot light indicators for each signal input described above, as well as, Pump No.1 and No.2 running inputs.

632.02.2.3.5 – The controller shall operate a pump based upon various combinations of signal inputs. Normal operation shall operate pumps in the following automatic sequence:

632.02.2.3.5.1 – With no signal inputs activated and both pumps off, a stop input activation shall not cause a pump to operate. With a stop input activated and a lead start input activated, the controller shall start a single pump that pump shall operate until the lead start and stop inputs are deactivated. With both the stop and lead start inputs activated and one pump operating, a lag start input being activated shall operate the second pump. Both pumps shall operate until the lag start, lead start, and stop inputs are deactivated.

632.02.2.3.5.2 – In the event an input device(s) fails to activate the controller shall operate as follows:

632.02.2.3.5.3 – With a stop input device failure, the controller shall operate a single pump based upon the status of the lead start input and a field adjustable short cycle delay. The short cycle delay shall keep the pump operating after the start input deactivates for the delay time setting. If the stop input device fails to activate, the controller shall operate one pump as described above with the lag start input starting the second pump. Both pumps shall operate until both start inputs are deactivated and the individual pump short cycle delays have expired. In the event both the stop and lead start inputs fail to operate, the controller shall operate both pumps based upon the status of the lag start input and the individual pump short cycle delay timers. Both pumps shall operate until the lag start input is deactivated and the individual pump short cycle delays have expired. If all input devices fail except the high/low alarm input, the controller shall operate both pumps based upon the status of the high/low alarm input and the individual pump short cycle delay timers. Both pumps shall operate until the high/low alarm input is deactivated and the individual pump short cycle delays have expired.

632.02.2.3.6 – A field adjustable failure time delay for each pump, in the range of 5 seconds to

62 minutes, to start the lag pump at the lead pump start point if the lead pump fails or if the lead pump selector switch is placed in the off position. If a pump fails, the remaining functional pump shall remain the lead pump on future cycles. The failed pump shall only be called to operate at the lag pump operating point. Normal pump alternation shall resume when the failure condition is corrected and the pump has been reset.

632.02.2.3.7 – Soft stop feature to require the pumps to stop three (3) seconds apart during the condition that both pumps are running when signaled to stop. Soft start feature to require the pumps to start three (3) seconds apart during conditions that the lead and lag pumps are called for simultaneously.

632.02.2.3.8 – Individual field adjustable time controls to delay starting each pump in the automatic mode after power failure or during initial startup.

632.02.2.3.9 – Pump failure, pump seal failure, and high/low alarm red pilot lights shall flash when activated. Provide field selectable controls to allow the seal failure indicator to burn steady when activated.

632.02.2.3.10 – Manual override inputs for each pump, which can be used to manually override the duplex controls', pump outputs when the controls are in the Automatic mode. Inputs shall be provided to start or stop each pump from a remote location.

632.02.2.3.11 – Provide a selectable improper sequence alarm to activate the common alarm in the event the control inputs are activated in the wrong order. The proper order shall be Stop, Lead Start, and Lag Start. The High water alarm shall not be included in the improper sequence test. Provide a selectable Lag Stop Level control to allow the lag pump to stop based upon the status of the lead start level input.

632.02.2.3.12 – Provide automatic pump alternation on pump failure and seal failure when a failure condition is detected and the pumps are in the automatic mode. The failed pump shall be made the lag pump on future cycles until the failure condition is corrected. Pump failure shall require manual reset to clear the failure condition and the seal failure condition shall clear when the failure condition clears. Provide field selectable controls to allow the seal failure condition to not automatically alternate the pumps.

632.02.2.3.13 – An exterior alarm light output that would flash the light brightly during any common alarm condition that includes pump failure, seal failure, improper sequence, and high water alarm. The output shall allow the light to dim glow under normal conditions to indicate that power is on and the lamp is good. A normally open common alarm output contact shall be energized by these alarm conditions. Provide selectable controls to prevent the seal failure input from activating the common alarm output and alarm light.

632.02.2.3.14 – Provide an intelligent Lift Station Analyzer with the following features:

632.02.2.3.14.1 – Provide the following additional inputs: an external normal power failure input for use in remote telemetry, three (3) 4-20 mA analog inputs with an input resistance of 100 ohms.

632.02.2.3.14.2 – Provide the following additional outputs: pump no.1 is lead, pump no.2 is lead, pump no.1 selector switch is in the automatic position, and pump no.2 selector switch is in the automatic position.

632.02.2.3.14.3 – Provide front panel status indicators for pump running, pump failure, pump seal failure, high/low alarm and auxiliary input.

632.02.2.3.14.4 – Provide selectable first on/first off control to allow the first pump activated to be the first pump off when both pumps are activated.

632.02.2.3.14.5 – Influent and Effluent flowrate calculation based on floats or portable submersible pressure level transmitter.

632.02.2.3.14.6 – Provide two serial communications ports, one RS-232 and one RS-485 for interfacing with RTU's, PLC's, radio or telephone modems, operator interfaces, and PC's. The ports shall support industry standard communication protocols, such as MODBUS^{tm} and BrickNet^{tm} at baud rates of 1200, 2400, 4800, and 9600.

632.02.2.3.14.7 – Provide a user selectable unit address from 000 to 999. The switches shall allow the unit address to be set without software or special equipment.

632.02.2.3.14.8 – Provide user selectable cross sectional area switches. The switches shall allow the cross sectional area of the wetwell to be set without software or special equipment.

632.02.2.3.14.9 – Provide user selectable float distance setting switches. The switches shall allow the distance between the stop, lead start and lag start floats to be set without software or special equipment.

632.02.2.3.14.10 – Provide average pump capacity calculation as well as the following other statistics: Pump Runtimes, High/Low and Average Inflow for the last 24 hours, Average flow-capacity loss when more than one pump is running, Estimate Real-Time level based upon current flows and float positions.

632.02.2.3.14.11 – Provide TRUE Volumetric Influent Flow calculation with long-term averaged error not to exceed 0.2% of Full Scale.

632.02.2.3.14.12 – The analyzer shall be capable of operating with float switches or a level controller with dry contact outputs for All-Stop, Lead Start and Lag Start during normal operation and use a portable submersible pressure level transmitter (SPLT) for automatic calibration in determining the level positions of all floats. During the calibration process, the SPLT shall automatically start the calibration procedure when it is plugged into the lift-station analyzer, and

stop the procedure when it is unplugged.

632.02.2.3.14.13 – For level control systems using SPLT level sensing, the analyzer shall be capable of using the signal from the SPLT in all calculations.

632.02.2.3.14.14 – The controller shall monitor key lift station functions such as Seal and Pump Failures, Improper Sequence, General Alarm, High Level Alarm, Pump Currents, pump runtimes, and pump duty cycles.

632.02.2.3.14.15 – Data-logging and storage in non-volatile memory.

632.02.2.3.14.16 – Capability for an optional external operator interface hex-keypad for easy entry of floating point numbers, set-points, menu selections and other parameters that need to be entered into the controller.

650.02.2.3.15 – The following information shall be transmitted from the (DC201D) Duplex Controller to the Master (CTU) Central Telemetry Unit. Triplex and Quadraplex stations shall be similar with additional information for the third and fourth pumps.

- Wet-well High Level
- Lag Pump Start
- Lead Pump Start
- All Pump(s) Stop
- Auxiliary # 1 Alarm Input
- Pump No. 1 Running
- Pump No. 2 Running
- Pump No. 1 Seal Failure Detected
- Pump No. 2 Seal Failure Detected
- UPS101A Low Battery Input
- Auxiliary # 4 (Spare)
- Auxiliary # 3 (Spare)
- Auxiliary # 2 (Spare)
- Pump No. 1 Set to Lead
- Pump No. 2 Set to Lead
- High Level Enable
- Improper Sequence
- Pump No. 1 in Auto
- Pump No. 1 in Manual
- Pump No. 2 in Auto
- Pump No. 2 in Manual
- Improper Sequence Delay Time
- Common Alarm
- Improper Sequence Alarm
- Pump No. 1 Failure Alarm
- Pump No. 2 Failure Alarm
- Pump No.1 Call For
- Pump No.2 Call For
- All Pumps Have Failed
- UPS101A Battery Failure
- Pump No. 1 Current Input
- Pump No. 2 Current Input
- Level Input
- Pump No. 1 Run Hours
- Pump No. 1 Run Thousand Hours
- Pump No. 2 Run Hours
- Pump No. 2 Run Thousand Hours
- Pump No. 1 Last Cycle Run Time
- Pump No. 2 Last Cycle Run Time
- Pump No. 1 Average Run Time
- Pump No. 2 Average Run Time
- Tank Fill Time
- Tank Pump-Down Time
- Average Tank Fill Time
- Average Tank Pump-Down Time
- Estimated Inflow

- Average Inflow
- Estimated Outflow
- Communications Stat Counter
- Inflow Gallons
- Inflow Thousands of Gallons
- Inflow Millions of Gallons
- Pump No. 1 Capacity
- Pump No. 2 Capacity
- Pumps 1 & 2 Capacity
- Pump No. 1 Average Capacity
- Pump No. 2 Average Capacity
- Pumps 1 & 2 Average Capacity
- Pump Capacity Ratio
- Estimated Tank Level
- P1 Current Cycle Run Time
- P2 Current Cycle Run Time
- 24 Hr. High Inflow
- 24 Hr. Low Inflow
- Cross-Sectional Area
- Improper Sequence Time Delay
- Pump Failure Delay Minutes
- Pump No. 1 Starts (0-999)
- Pump No. 1 Starts (Thousands)
- Pump No. 2 Starts (0-999)
- Pump No. 2 Starts (Thousands)
- Stop Level Tank Capacity
- Lead Level Tank Capacity
- Lag Level Tank Capacity
- Previous 24 Hr. Inflow High

650.02.2.4 – Float Test Option Module. Provide input indicator and test module with improper input sequence indicator and controls of the Model FT101A made by Control Systems, Inc., Jackson, MS. The following controls and equipment shall be supplied:

650.02.2.4.1 – Four deadfront panel mounted input pilot light indicators: One for each of the following control points: Stop, Lead Start, Lag Start and High Alarm.

650.02.2.4.2 – Four dead-front panel mounted pushbuttons to test each pump control input point.

650.02.2.4.3 – Automatic input sequence monitoring, such that if the inputs do not occur in proper order (stop, lead start, lag start), a red pilot light indicator shall be activated.

650.02.2.4.4 – If stop input fails, followed by lead input activation, lead pump shall operate and continue until lead pump input is removed and a field adjustable time delay has expired

650.02.2.4.5 – If stop input fails, followed by lead and lag input activation, both pumps shall operate and continue until their respective input is removed and an individual field adjustable time delay for each pump has expired.

650.02.2.4.6 – If stop, lead and lag inputs fail, followed by high input activation, both pumps shall operate and continue until the high input is removed and a field adjustable time delay for each pump has expired.

650.02.2.4.7 – Improper sequence activation shall also activate the common external alarm controls.

650.02.2.4.8 – Improper sequence alarm shall require reset button activation to remove the alarm light.

650.02.2.5 – Triplex Pump Controller Module Features and Functions. Provide a Triplex Pump Controller Module to control three single speed pumps with features and function of the Model QC101B made by Control Systems, Inc., Jackson, MS including the following features. Refer to Section 650.02.2.15 above for available information to be transmitted to the Master (CTU) Central Telemetry Unit.

650.02.2.5.1 – Operators and Indicators

Manual-Off-Automatic selector switch
Green "Running" pilot light
Red "Failure" pilot light
Red "Seal Failure" pilot light
Green pump "Start" pilot lights for Lead, Lag 1 and Lag 2
Amber pump "Stop" pilot lights for Lead, Lag 1 and Lag 2

650.02.2.5.2 – Level Inputs

650.02.2.5.2.1 – Individual "Start" and "Stop" level control points shall be provided for each pump or field adjustable controls shall be provided to allow the first "Stop" level control point to stop all of the pumps.

650.02.2.5.2.2 – Provide a High liquid level alarm input sensing point, as required for the application.

650.02.2.5.2.3 – Provide pilot light indicators for each level input sensing point.

650.02.2.5.2.4 – Provide manual override inputs for each pump, which can be used to override the triplex controller's pump call-for outputs when the controls are in the Automatic mode. Inputs shall be provided to start or stop each pump from a remote location.

650.02.2.5.2.5 – All pump control inputs shall be optically isolated and their power limited to 24 Vdc with a maximum current of 16 mAdc for intrinsic safety.

650.02.2.5.3 – Pump Sequencing

650.02.2.5.3.1 – Automatic pump alternation on lead pump "Call" cycle. Pump alternation shall be field selectable to alternate on a first pump "ON", first pump "OFF" basis or on a last pump "ON", first pump "OFF" basis.

650.02.2.5.3.2 – The pumps shall also alternate as lead pump, when the lead pump reaches a field adjustable running period, which shall have a time range from 10 minutes to 21 hours.

650.02.2.5.3.3 – Provide a field adjustable failure time delay for each pump. If a pump fails to run, or if that pump's selector switch is placed in the off position, provide controls to start the next pump in the sequence at the failed or disabled pump=s operating call-for input setting.

650.02.2.5.3.4 – If a pump fails to run, that pump shall automatically become the last called for pump in the operating sequence. Normal pump alternation shall resume when the failure condition is corrected and the failed pump has been reset.

650.02.2.5.3.5 – Provide individual field adjustable time controls to delay starting each pump in the automatic mode after power failure or during initial start.

650.02.2.5.3.6 – Provide stagger stop feature to require the pumps to stop a minimum of two (2) seconds apart during the condition that two or more pumps are running when signaled to stop. Provide stagger start feature to start the pumps a minimum of three (3) seconds apart during conditions that two are more pumps are called for simultaneously.

650.02.2.5.3.7 – Provide controls to remove any pump(s) from the alternating sequence, making the removed pump(s) the last pump(s) to be called for if the input conditions require it.

650.02.2.5.3.8 – Pump failure, Seal failure, High-level alarm, and Improper Sequence alarm red pilot lights shall flash when activated.

650.02.2.5.3.9 – Provide automatic controls to alternate pumps on Pump Failure, Seal Failure, or when a pump is running in Automatic and is manually turned off.

650.02.2.5.3.10 – When pump seal failures are not needed, the seal failure circuitry for each pump shall be able to indicate an auxiliary condition by flashing or steady operation without interfering with the controller operation.

650.02.2.5.4 –Input Monitoring and Control

650.02.2.5.4.1 – The Manual-Off-Automatic switches shall bypass all of the controls and energize their respective pump outputs when placed in the Manual position. In the Manual and Off modes, pump failure alarms shall be disabled.

650.02.2.5.4.2 – The Manual-Off-Automatic switches shall be used to reset a pump failure alarm after the failure condition has been cleared, by manually switching the failed pump to the OFF position and back to Automatic.

650.02.2.5.4.3 – Provide automatic input sequence monitoring, such that if the first "All Pumps Stop" input fails to activate, and any two start inputs are activated, the lead pump shall start.

650.02.2.5.4.4 – If a third start input is activated, start the first lag pump.

650.02.2.5.4.5 – If the high-level alarm input is activated, start all pumps.

650.02.2.5.4.6 – When operating in a "Last On, First Off" mode, each pump that is started is turned off at the next lower start input setting during the "improper sequence". That is, the Lag 2 pump will turn off at the Lag 1 Start setting, Lag 1 will turn off at the Lead Start setting, and the Lead pump will run until the Lead Start input turns off.

650.02.2.5.4.7 – When operating in a "First On, First Off" mode, the Lead pump will turn off first, followed by the Lag 1 and Lag 2 pumps.

650.02.2.5.4.8 – Provide a red pilot light indicator to alarm "Improper Input Sequence" when any of the above-described conditions occurs. Also, provide a manual reset pushbutton switch for clearing the Improper Sequence alarm.

650.02.2.5.4.9 – If the "improper sequence" clears itself, the pumps will return to normal operation. The alarm will continue to be energized until manually reset.

650.02.2.5.5 – Annunciating

650.02.2.5.5.1 – Provide individual discrete pump running output contacts for each pump.

650.02.2.5.5.2 – Provide individual discrete "Alarm Telemetry" dry contact outputs for the following alarms:

Each Pump Failure
Each Pump Seal Failure (If Required)
High Level Alarm
Improper Level Input Sequence

650.02.2.5.5.3 – Provide a Common Alarm discrete output contact that will actuate when any alarm condition occurs.

650.02.2.5.5.4 – Provide an exterior alarm light output, which allows the light to dim glow under normal conditions to indicate power on and lamp good. The light shall flash brightly during any alarm condition.

650.02.2.5.5.5 – Provide a lamp test feature to light all of the front panel pilot lights.

650.02.2.6 – Remote Telemetry Unit. Provide a Remote Telemetry Unit (RTU) to interface with the Pump Controller Module to transmit I/O to and from the Master Computer via the radio modem transceiver, as described below. The RTU shall have the features and functions of a Model RTU103 as made by Control Systems, Inc., Jackson, MS.

650.02.2.6.1 – The RTU shall feature an I/O count expandable to twenty (20) digital inputs (DI), twelve (12) digital outputs (DO), eight (8) 4-20 mA analog inputs (AI), two (2) isolated 4-20 mA analog outputs (AO), four (4) RS232 serial ports, one (1) dedicated serial programming port and the capability of "daisy-chaining" another RTU via a serial port for expandability. The unit should be back-plate mounted and 12VDC powered with optional battery backup for operation even under power failure conditions. The programming language shall be 'C'. The microprocessor shall have 512K of Flash memory, 512K of SRAM memory and a Real-Time-Clock. The microprocessor shall run at a minimum of 29.4 MHz. The SRAM and Real-Time-Clock shall be maintained by a lithium battery. Provide separate LED indicators for all digital I/O, analog outputs and serial ports. Digital inputs shall be dry-contact type with a maximum voltage potential of 12VDC. Digital outputs shall be open-collector NPN Darlington transistor type with a maximum current rating of 150 mA per channel. There shall be provisions to support up to eight (8) 4-20 mA analog inputs using plug-on cards. Provide support for two (2) optional isolated 4-20 mA analog outputs. Four (4) standard 9-pin serial ports, all including Tx, Rx, Rts and Dcd pins, shall be provided for external communications and one dedicated serial port for programming. Provide optional 10/100Base-T Ethernet connectivity. The RTU shall have quick-connect plugs for all I/O points.

650.02.2.7 – Radio Modem Transceiver. Provide a Radio Modem Transceiver to transmit duplex and triplex lift station data to the existing Central Terminal Unit (CTU) at the City's master SCADA location. The radio Modem Transceiver shall provide re-farming compliant high speed data link communication with system security and diagnostic reporting. The RMT shall provide full UHF, VHF, and 900 MHz MAS bands as required by the FCC license. The RMT shall be capable of transmitting MODBUS protocol messages. Built-in radio diagnostics shall be included and shall be capable of reporting specific unit programming, link testing, and radio performance statistics including RSSI, temperature, supply voltage, and additional parameters throughout the radio. Radio diagnostic information shall be capable of on-line communication with each transmission with no interruption in the application, and with minimum overhead. The RMT shall also comply with FCC re-farming and power regulations. Bandwidth shall not exceed 12.5 KHz. To assure communications with the OWNER's existing resources and to assure compliance with FCC regulations, Radio Modem Transceivers shall be Cal-Amp Model Guardian 100.

650.02.2.8 – Radio Path Survey. Provide a radio path survey to measure radio signal strength and to properly design transceivers, antennas, masts and any other equipment necessary for data radio communication between each CTU/RTU site. Contractor shall provide radio repeaters as necessary for this purpose. The Owner's existing facilities will be made available for installation of this equipment including 120V AC power if already existing. To assure reliable radio data communication, the minimum acceptable signal strength between RMT sites necessary for communication links shall be 85dB. Provide a Radio Path Survey Report to the City Engineer or his authorized representative including all measured field data, survey equipment used, site location including latitude and longitude of all sites, and recommended radio equipment, antennas and antenna masts necessary to achieve the required radio signal strength. This report shall be provided to the City Engineer or his authorized representative for review prior to the installation of any radio equipment. Acceptance of the Radio Path Survey Report shall in no way absolve the Contractor from the responsibility for provision of reliable radio communication system required.

Apply for secure and provide FCC license(s) in the Owner's name for VHF radio frequency as required for data radio communication. All application fees and processing fees for this purpose shall be the responsibility of the Contractor. The Contractor shall be responsible for providing and installing proper antenna masts determined by the radio path survey. The Contractor shall coordinate the installation of each with the project Engineer and Owner.

650.02.2.9 – Radio Antenna. Provide an Omni or Yagi type antenna with gain as required for signal proper strength. The antenna shall be connected to the radio modem transceiver with RG/8U low loss coaxial cable. In addition, a coaxial type Antenna Protector shall be provided for connection of coaxial cable to the control panel enclosure. Antenna shall be equal to Cushcraft model CRX-150B (omni) or P154-4 (yagi). Antenna Protector shall be equal to Polyphaser model IS-B50LN-C2.

650.02.2.10 – Power Supply. Provide a Power Supply to provide 13.5V DC for the radio modem transceiver and remote telemetry unit on triplex stations.

650.02.2.10.1 - Power supplies shall be for 120V AC primary and 13.5V DC secondary and shall have a frequency range of 47-440 Hz with an inrush current of 35A. Secondary adjustment range shall be ±10% minimum. Line and Load regulation shall be ±0.3%. Output ripple shall be no more than 180mV. Voltage Tolerance shall be ±1%. Over voltage protection shall clamp at 115-135% and short circuit protection shall be continuous, self-recovering.

650.02.2.11 – Uninterruptible Power Supply. Provide an Uninterruptible Power Supply/12V DC battery charger with 24V DC auxiliary power output option (UPS). In Addition, provide one (1) 12V DC 12 Ah Backup Battery for the UPS in the event of a power failure.

650.02.2.11.1 – The uninterruptible power supply shall function as a battery charger for 12V DC Sealed Lead Acid rechargeable batteries with an optional 24V DC isolated output. The maximum battery current charging current is 2.9 amps for a completely dead battery and typically less than 0.4 amps for battery voltages over 10V DC. Trickle charging shall stop at a battery voltage of 13.8V DC. The unit shall operate on 13.8V DC with a current rating of up to 11 amps. Provide an optional, integral battery backed up 24V DC option that is capable of being field mounted onto the unit, for powering external 4-20 mA loops or other instrumentation of up to 1 amp maximum load and shall be isolated from the input power supply if necessary. Provide quick-connect terminal blocks for all connectors. Provide High and Low input power supply voltage.

650.02.2.12 – Dual Current Monitor. Provide a Dual Current Monitor (CM) and properly sized Current Transformers to monitor the motor current of each pump and provide an analog signal to the duplex controller. Provide a dual 5-amp Current Transformer (CT) input to dual 4-20 mA DC current output converter. The circuitry shall include true Root Means Square (RMS) conversion for the most accuracy. The converter shall be SnapTrack or backplate mounted, as required, and be powered by +12V DC. Provide input contact terminals for a quantity of two 5-amp current transformers and output contact terminals for dual, isolated 4-20 mA outputs. The unit shall supply the +12V DC voltage to power both 4-20 mA outputs. Provide quick-disconnect connectors with

capture type terminals for ease of testing. Spring-clip terminals shall not be accepted. Current monitor shall have the following features and functions.

A. External Power Supply Requirements: +12V DC at 120mA
B. Current Transformer Inputs: 0 – 5 amps AC
C. Output Current: Dual, isolated 4 – 20mA DC; maximum 500 ohms load each
D. Humidity: 5 – 95% non-condensing
E. Warranty: 1-year

650.02.2.12.1 – Current Transformer. Current transformers insulation class shall be 0.6 KV BIL, 10 KV Full Wave. They shall be manufactured to meet the requirements of UL1244 and have a minimum accuracy of 60Hz of 2%. Current transformers shall be provided with brass stud terminals and mounting bracket.

650.02.2.13 – Submersible Pressure/Level Transmitter. Provide a solid-state direct submersible level sensor and transducer designed as pressure sensor for continuous, hydrostatic level measurement in open containers/basins. Transmitter shall have a high resistance to overload and aggressive media with a ceramic diaphragm and enclosed in 316L stainless steel housing. The range of the transmitter shall be as required for the desired application with excitation voltage of 10 - 35V DC. Instrument cable shall be commercially available shielded instrument cable with a minimum of forty-foot (40') cable length. The transmitter shall be capable of being supported by its own cable. The electronics shall be completely potted and provide an analog output to drive a level meter controller. The output shall be 4 - 20mA. The operating temperature shall be –20 to +70°C (-4 to +158°F) and the accuracy shall be ±0.2% full scale. Pressure overload rating shall be 40 times the adjusted span. Long term drift shall be ±0.1% full scale per year. The transmitter shall be mounted near the bottom of the vessel with support bracket and be cable connected. Transmitter shall have Drinking water approvals: KTW, NSF, and ACS; and approvals by: ATEX, FM, and CSA. Submersible Pressure/Level Transmitter shall be Endress + Hauser Waterpilot Model FMX21, or approved equal.

650.02.2.14 – Wet-Well Level Indicator. Provide a Wet Well Level Indicator mounted on the interior deadfront panel to display the pump station wet well level. The indicator shall receive an analog signal from the wet well submersible pressure/level transmitter as described above.

650.02.2.15 – Float Switches. In the automatic mode, the Duplex / Triplex Controller shall receive start and stop commands based upon the level in the station wet well as sensed by the float switches.

Provide float switches for: stop, lead pump start, lag pump start, 2nd lag pump start (triplex stations) and high alarm.

The float switches shall be a direct acting switch and contain a single pole mercury switch which activates when the longitudinal axis of the float is horizontal and deactivates when the liquid level falls 1 inch (1") below the actuation elevation. The float shall have a chemical resistant

polypropylene casing with a firmly bonded electrical cable protruding. One end of the cable shall be permanently connected to the enclosed mercury switch and the entire assembly shall be capsulated to from a completely watertight and impact resistant unit. Float shall include a bracket for support pipe mounting.

650.02.2.16 - Run Time Meters. Provide run time meters for each pump and the time that both pumps are running. Mount meters on the interior swing out panel.

Unless otherwise shown on the drawings, run time meters shall have the features and functions of a Model T50B2 as manufactured by ENM Company, Chicago, IL or approved equal including the following:

a. Sealed and tamper resistant case
b. Six digit AC hour meter
c. Quartz crystal time base
d. Frequency insensitive

650.02.2.17 – Common Alarm Light. Provide a weatherproof exterior common alarm light with red Lexan lens as described below. The exterior alarm light shall be activated during high water level, pump failure, or seal failure.

Alarm light shall be above the fence and visible from the road. Mount the alarm light as shown on the plans. The light shall be PERFECT LINE catalog number B-100/PVG-1R or equal. The alarm light shall burn dim and steady during normal conditions to indicate electrical power "ON" and lamp good. During any alarm condition the alarm light shall flash brightly.

650.02.2.18 – Control Panel to Wetwell Junction Box. Provide a weatherproof exterior stainless steel cabinet junction box as shown on the plans. Wiring changes to the pumps and float switches will be made via the conduit to the junction box in lieu of to the control panel.

650.02.2.19 – Submittals. Operating and Maintenance manuals, installation instructions, and Shop Drawings shall be submitted in accordance with the General Conditions and these specifications.

Submittal packages including drawings shall be furnished prior to factory assembly of the pump controller package. These packages shall consist of elementary power and control wiring, enclosure outline drawings as well as the complete Bill of Material (BOM). The enclosure drawings shall include front and side views of the enclosures with overall dimensions, and general component arrangement of the sub-plate. Drawings shall be produced using computer aided software compatible with AutoCAD, latest version. Drawing files shall be furnished to the Owner or his authorized representative on compact disk. Standard catalog specification sheets showing applicable ratings shall be furnished as part of the submittal package.

Detailed shop drawings for the elevated platform (if applicable to this particular project) shall also be provided for review and approval prior to construction. The platform shall meet all current code and safety requirements, especially with regard to structural integrity, handrails, stair configuration, clearances at the electrical panel, etc.

650.02.2.20 - Training. On-site training of one day per controller shall be provided by a factory trained representative of the manufacturer to plant and/or maintenance personnel.

650.03 - Construction Requirements. Install equipment in accordance to manufacturer's instructions, drawings and recommendations. Provide a factory trained technical representative to inspect the installation, test and start-up the equipment furnished under this specification.

650.03.1 – Documentation. All documentation including a copy of the complete schematics, product data sheets, interconnection instructions, inspection and/or certification reports, and any special instructions shall be bundled inside each enclosure.

Provide project closeout documentation in accordance with the General Conditions of the contract.

The supplier shall provide a written warranty with submittal drawings covering all Control materials and parts furnished for a period ending one year after final acceptance of the project. This warranty shall cover all material replacement, all labor, and all travel expenses.

650.04 - Method of Measurement. Measurement for Duplex/Triplex Pump Control Panel, Elevated Platform for Controls and Pole to Elevated Controls will be measured complete in place and operational. The cost of all testing and startup shall be included in the measurement for these lump sum items. The removal of any existing control panels and/or poles, new wire and conduit, grounding, aluminum uni-strut, light fixtures, safety switches, service poles and all other items shown on the electrical drawings for the lift station shall be included in the lump sum amount(s).

All equipment testing, setting of new service pole, coordination with electrical service provider, equipment start-up, and training will be considered subsidiary obligations of the Contractor and will not be measured for separate payment.

650.05 - Basis of Payment. This work will be paid for at the contract unit prices per unit specified, complete in place, which shall be full compensation for completing the work. Materials or work for which a pay item is not included and are necessary to complete the work under this section shall be furnished or performed and shall be considered incidental to the completed construction.

Payment will be made under:

907-650-A: Duplex / Triplex Pump Control Panel	-per lump sum
907-650-B: Elevated Platform for Controls	-per lump sum

907-650-C: Pole to Elevated Controls -per lump sum

CITY OF BILOXI

SPECIAL PROVISION NO. 907-699-1 **CODE: (SP)**

DATE: 01/24/2020

SECTION 699 – CONSTRUCTION STAKES

Subsection 699.03 - Construction Requirements

Delete the first two paragraphs of Subsection 699.03.

Delete the seventh paragraph of Subsection 699.03 and replace with the following:

> The Contractor will be responsible for calculating and laying out all additional lines, grades, elevations, and dimensions necessary to construct the work required in the plans. The originals of all data shall be furnished to the Engineer upon his request. Any inspection or checking of the Contractor's layout by the Engineer will not relieve the Contractor of the responsibility to secure proper dimensions, grades, and elevations of the several parts of the work.

Delete the ninth, tenth, and eleventh paragraphs of Subsection 699.03 and replace with the following:

> The Contractor shall set stakes and/or flags on the right-of-way line as directed by the City Engineer or his authorized representative.

In the thirteenth paragraph of Subsection 699.03, delete the following as well as the subsequent website address:

> " and the latest edition of the MDOT Survey Manual. The MDOT Survey Manual can be obtained online at the following address"

Subsection 699.04 – Method of Measurement

Delete Subsection 699.04 in its entirety and replace with the following:

> Construction stakes will not be measured for separate payment. The cost thereof shall be absorbed in other items bid.

Subsection 699.05 – Basis of Payment

Delete Subsection 699.05 in its entirety and replace with the following:

> Construction stakes and construction staking, as prescribed above, will be Cost Absorbed by the Contractor.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-700-1 **CODE: (SP)**

DATE: 07/05/2017

SECTION 700 – MATERIALS AND TESTS

Subsection 700.03 – Sampling and Testing

Delete the third paragraph of Subsection 700.03 and insert the following paragraphs:

> Material requiring specified tests used by a plant for producing composite material(s) or product(s) to be used in the work will be tested by the Contractor and approved by the City Engineer or his authorized representative. If such materials, composite materials, or products are stored for the exclusive use in the work, the cost of testing will be done by the Contractor.
>
> The Contractor shall employ a testing laboratory to perform the necessary testing services required by the plans and specifications. The testing laboratory shall be certified by the Mississippi Department of Transportation to perform testing on urban projects and is subject to approval by the City Engineer or his authorized representative.
>
> The City Engineer or his authorized representative reserves the right to request additional testing not shown on the "Testing and Submittal Requirements" list which may be necessary to show compliance with the plans and specifications. The Contractor shall be responsible for all costs incurred for testing and testing services including costs for any additional tests required by the City Engineer or his authorized representative.
>
> Samples collected for granular material testing shall be taken from the roadway (or other placement areas) on the project sit, except for testing for source approval. Precaution must be taken or prevent contamination with underlying material. The City Engineer or his authorized representative shall determine the exact location for the sample to be collected.

Subsection 700.04 – Determination of Conformity

Add the following sentences to the end of the second paragraph of Subsection 700.04:

> All density test results, excluding asphalt density tests, shall meet the 95% density as determined ASTM D1557 without any rounding of fractions. The Contractor shall assume the costs of all retest on materials that do not meet the requirements of the contract. Retests shall be performed until the material meets the required density.

If the City Engineer or his authorized representative determines that a soil sample has not been taken that represents the area, a new soil sample shall be taken from the area and the maximum density shall be obtained in accordance with ASTM D1557. A new correlation shall be performed and densities shall be retaken for the area using the new information.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-708-1 **CODE: (SP)**

DATE: 07/05/2017

SECTION 708 - NON-METAL STRUCTURES AND CATTLEPASSES

Subsection 708.02.3.7 - Lift Holes

Delete Subsection 708.02.3.7 in its entirety and insert the following:

> **Subsection 708.02.3.7 - Lift Holes**. Lift holes in concrete pipe will not be permitted.

CITY OF BILOXI

SPECIAL PROVISION NO. 907-823-1

DATE: 11/21/2017

SECTION 823 - TIMBER STRUCTURES FOR PIERS

Subsection 823.01 -Description

This work shall consist of the installation of all timber framing, including caps, stringers, decking, railing, connectors and wood accessories, as detailed on the plans and/or in these specifications.

The Contractor shall furnish all labor, equipment, tools, transportation, and supplies required to install the various structures in accordance with the plans, specifications, and terms of the contract.

Subsection 823.02 - Materials

823.02.1- Timber and Dimension Lumber

All timber shall be Southern Pine, medium grained or better, shall be well manufactured, and shall conform in all respects to applicable requirements of SPIB Grading Rules for white lumber and AWPA for treating standards.

All structural members, including pile beams, stringers, balusters and decking, shall be full cut, No.2 or better, graded and grade stamped by an ALSC approved grading agency, and cut to final shape before treatment.

All pile beams and stringers shall be S2E, decking handrail and balusters shall be S4S FULL. All timber members shall be full cut or will be rejected by the Engineer.
823.02.2- Treatment

Structural members, including beams and stringers shall be treated with Chromated Copper Arsenate (CCA, Type C) to a retention not less than 2.5 pounds per cubic foot (use Category AWPA-UCSC).

Decking and handrail shall be treated with Micronized Copper Azole to a retention not less than 0.23 pounds per cubic foot, Micronized or .23 μCA-C Dispersed (use Category AWPA-UC4B).

Balusters with Micronized Copper Azole to a retention not less than 0.06 pounds per cubic foot, Micronized or .05 μCA-C Dispersed (use Category AWPA-UC3B).

823.03- Wood Preservative Chemicals

Chromated Copper Arsenate (CCA) - CCA solution shall contain a sufficient concentration of the water-borne preservative to produce the minimum specified retention. The preservative shall meet the requirements of AWPA P-5, CCA Type B or C. The test methods shall be either AWPA or Mississippi Test Methods.

823.04- Connectors

All connectors, excluding screws, shall be hot-dip galvanized in conformance with ASTM-153. Ogee washers shall be utilized throughout.

Beam plates and stringer brackets may be supplied by Collier Welding and Fabrication, 13701 Highway 57, Vancleave, MS 39565, (228) 826-5000 or equal.

Decking screws shall be #10 x 4", 316 stainless. Screws shall be counter sunk approximately 1/8".

Subsection 823.03 -Construction Requirements

Treated timber shall be carefully handled without sudden dropping, breaking of outer fibers, bruising or penetrating the surface with tools. Cant hooks, peaveys, spikes, or hooks shall not be used.

All cutting, framing and boring of treated timber shall be done before treatment insofar as practicable. Untreated cuts, borings, or other joins framing shall be avoided.

All cuts in treated timbers, and all abrasions, after having been carefully trimmed, shall be covered with two (2) applications of COP-R-TOX solution containing 20% Copper Naphthnate, after the pier has been constructed.

Holes for matching bolts shall be bored with a bit the same diameter as the bolt.

An ogee washer shall be used under all bolt heads and nuts which would otherwise come in contact with wood.

The nuts of all bolts shall be effectively locked after having been tightened.

All lumber and timber shall be accurately cut and framed to a close fit in such a manner that the joints will have even bearing over the entire surface. Deck Boards shall fit snug with sheet pile walls (within Y2") and shall be notched around sheet pile joints.

Workmanship shall be first-class throughout. All framing shall be true and exact.

Stringers shall be fastened at laps with 1-3/8" hot dip galvanized bolt with ogee washer. Interior stringers shall be secured to cap with 1/2" galvanized lag bolts 12" long (8 per bent).

The Contractor shall secure an approved treated products testing company to provide material testing of all treated timbers used on this project. The Engineer shall be provided test records before any treated materials can be used. The Contractor will be responsible for payments of testing.

Subsection 823.04 - Method of Measurement

Pier framing including beams, braces, stringers, and decking for construction will be measured per linear foot of actual board length and shall include the cost for all fasteners.

Handrail system, complete including all posts, rails, and connectors shall be measured by the linear foot.

Wooden benches, complete and installed per plans will be measured as a unit, per each.

Subsection 823.05 - Basis of Payment

Payment will be made under Pay Item No.

907-823-A:	2" x 8" Cross Bracing	- per linear foot
907-823-B:	3" x 14" Joist, Complete in Place	- per linear foot
907-823-C:	2" x 12" Stringer, Complete in Place	- per linear foot
907-823-D:	2" x 8" Decking, Complete in Place	- per linear foot
907-823-E:	3'-6" High Handrail System	- per linear foot
907-823-F:	Wooden Benches, Complete in Place	-per each

Revised: 06/09/2017

SECTION 905-A
CITY OF BILOXI PROJECT
CONTRACTOR PROPOSAL FORM

PROPOSAL: **PROJECT NAME**
PROJECT NUMBER XXX

BID OF: _____
Contractor (corp./partnership, individual)

_____

_____
Address

Certificate of Responsibility No. _____

TO: The CITY OF BILOXI
140 Lameuse Street
P.O. Box 429
Biloxi, Mississippi 39533

TO WHOM IT MAY CONCERN:

The bidder, in compliance with your invitation for bids for **PROJECT NAME**, **PROJECT NUMBER XXX**, in accordance with these plans and specifications prepared by the City Engineer of the CITY OF BILOXI, having examined the Drawings, Specifications, Special Provisions, Notice(s) to Bidders, herein, and related documents, the site of the proposed work and being familiar with all the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to do all the work and furnish all labor, materials, equipment, fuel and supplies and to construct the project in the manner specified. The bidder understands that the quantities mentioned herein are approximate only and are subject to either increase or decrease, and hereby proposes to perform any increased or decreased quantities of work at the unit prices bid, in accordance with the above and at the time set forth.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the written "Notice to Proceed" from the CITY OF BILOXI and to fully complete the project within (NUMBER OF DAYS WRITTEN OUT) (NUMBER OF DAYS AS A NUMBER) calendar days thereafter as stipulated in the specifications. For failure to complete the work on time, the Bidder further

agrees to pay liquidated damages in accordance with the Specifications, after the XXX calendar days designated for completion of the work.

Bidder acknowledges receipt of and has added to and made a part of the proposal and contract documents the following addendum (addenda):

Addendum No. _____ Dated _____
Addendum No. _____ Dated _____
Addendum No. _____ Dated _____
Addendum No. _____ Dated _____

TOTAL ADDENDA: _____
(Must agree with total addenda issued prior to opening of bid)

The Bidder understands that the CITY reserves the right to reject any or all bids and to waive informalities in the bidding.

The Bidder agrees that his bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving bids, unless the City and contractor mutually agree upon a different period.

Attached hereto is a Proposal Guaranty consisting of a certified check, cashier's check or Bid Bond in the amount as required in the Advertisement (or, by law).

The bidder agrees to provide all "force account or extra work" that may be required on the basis provided in the Specifications and to give such work their personal attention in order to see that it is economically performed. Any changes from the original contract items shall be incorporated into the project by a change order.

The Bidder further proposes to execute the attached contract agreement (Section 902) and all other Proposal Documents (Section 905) as soon as the work is awarded to them and shall begin and complete the work within the time limits provided for in the Specifications and Advertisement. The Bidder also proposes to execute the attached payment and performance bond (Section 903) or other city approved form(s) in an amount not less than one hundred percent (100%) of the total of the work, but shall also guarantee the excellence of both workmanship and materials until the work is finally accepted.

The bid security/proposal guaranty attached in the form of a certified check, cashier's check or bid bond in the sum of (DOLLAR AMOUNT WRITTEN OUT) Dollars ($ DOLLAR AMOUNT AS NUMERALS) is to become the property of the CITY OF BILOXI in the event the Bidder fails to execute the contract and furnish all other required security within ten (10) days after notice of award, the amount of this check (or bid bond) will be forfeited to the CITY as liquidated damages arising out of the Bidder's failure to execute the contract as proposed. It is understood that in case the Bidder is not awarded with work, the check will be returned as provided in the Specifications.

IN TESTIMONY WHEREOF, the Bidder has hereunto affixed his legal signature on this,

_____ day of _____, 20_____ .

Respectfully submitted, _____
Contractors

By: _____

Title: _____

Address: _____

_____

(To be filled in if a corporation)

Our corporation is chartered under the Laws of the State of _____ and the names, titles and business addresses of the executives are as follows:

President	Address
Secretary	Address
Treasurer	Address

S E A L

The following is my (our) itemized proposal:

(PROJECT NAME) - PROJECT NUMBER XXX

SCHEDULE NO. 1
OF
CONTRACT ITEMS AND UNIT PRICES

Item No.	Total Approx. Quantity	Description with Unit Price Bid	Unit Price	Total Extension
907-202-B	XXX LF	Removal of Pipe (4" – 18" in diameter) at _____ _____ _____ dollars _____ _____ cents per linear foot	$ _____ per linear foot	$ _____

==========

BID (Schedule No. 1)
FOR THE SUM OF _____ Dollars
(Amount in Words)

In case of any discrepancy in the total sum above, the amount in words will govern. The sum total given is subject to verifications of the correctness of extensions and amounts given.

Revised: 06/09/2017

SECTION 905-B
CITY OF BILOXI PROJECT
NON-COLLUSION, DEBARMENT/INELIGIBLE
CERTIFICATION
(Execute in duplicate)

State of Mississippi
County of _____

I, _____,
(Name of person signing certification)

individually, and in my capacity as _____ of

_____ do hereby certify
(Name of Firm, Partnership, or Corporation)

under penalty of perjury under the laws of the United States and the State of Mississippi that

_____, Bidder on Project
(Name of Firm, Partnership, or Corporation)

No. _____, in Harrison County, Mississippi, has not either directly or indirectly entered into any agreement, participated in any collusion; or otherwise taken any action in restraint of free competitive bidding in connection with this contract; nor have any of its corporate officers or principal owners.

Except as noted hereafter, it is further certified that said legal entity and its corporate officers, principal owners, managers, auditors and others in a position of administering federal funds:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or Local) transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or Local) with commission of any of the offenses enumerated in Item (b) of this subsection; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default.

Initial here "_____" if exceptions are attached and made a part thereof. Any exceptions shall address to whom it applies, initiating agency and dates of such action.

Note: Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

The bidder further certifies that the certification requirements contained in Section XI of Form FHWA 1273, will be or have been included in all subcontracts, material supply agreements, purchase orders, etc. except those procurement contracts for goods or services that are expected to be less than the Federal procurement shall purchase fixed at 10 U.S.C. 2304(g) and 41 U.S.C. 253(g) (currently $25,000) which are excluded from the certification requirements.

The bidder further certified, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions will be completed and submitted.

The certification contained in (1) and (2) above is a material representation of fact upon which reliance is placed and a prerequisite imposed by Section 1352, Title 31, U.S. Code prior to entering into this contract. Failure to comply shall be subject to a civil penalty of not less than $10,000 and not more than $100,000. The bidder shall include the language of the certification in all subcontracts exceeding $100,000 and all subcontractors shall certify and disclose accordingly.

All of the foregoing and attachments (when indicated) is true and correct.

Executed on _____ _____

Signature

Revised: 06/09/2017

SECTION 905-B
CITY OF BILOXI PROJECT
NON-COLLUSION, DEBARMENT/INELIGIBLE
CERTIFICATION
(Execute in duplicate)

State of Mississippi
County of _____

I, _____,
(Name of person signing certification)

individually, and in my capacity as _____ of

_____ do hereby certify
(Name of Firm, Partnership, or Corporation)

under penalty of perjury under the laws of the United States and the State of Mississippi that

_____, Bidder on Project
(Name of Firm, Partnership, or Corporation)

No. _____, in Harrison County, Mississippi, has not either directly or indirectly entered into any agreement, participated in any collusion; or otherwise taken any action in restraint of free competitive bidding in connection with this contract; nor have any of its corporate officers or principal owners.

Except as noted hereafter, it is further certified that said legal entity and its corporate officers, principal owners, managers, auditors and others in a position of administering federal funds:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or Local) transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or Local) with commission of any of the offenses enumerated in Item (b) of this subsection; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default.

Initial here "_____" if exceptions are attached and made a part thereof. Any exceptions shall address to whom it applies, initiating agency and dates of such action.

Note: Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

The bidder further certifies that the certification requirements contained in Section XI of Form FHWA 1273, will be or have been included in all subcontracts, material supply agreements, purchase orders, etc. except those procurement contracts for goods or services that are expected to be less than the Federal procurement shall purchase fixed at 10 U.S.C. 2304(g) and 41 U.S.C. 253(g) (currently $25,000) which are excluded from the certification requirements.

The bidder further certified, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions will be completed and submitted.

The certification contained in (1) and (2) above is a material representation of fact upon which reliance is placed and a prerequisite imposed by Section 1352, Title 31, U.S. Code prior to entering into this contract. Failure to comply shall be subject to a civil penalty of not less than $10,000 and not more than $100,000. The bidder shall include the language of the certification in all subcontracts exceeding $100,000 and all subcontractors shall certify and disclose accordingly.

All of the foregoing and attachments (when indicated) is true and correct.

Executed on _____ _____

Signature

RPS-1
Rev. 01/05

SECTION 905-C
REQUEST FOR PERMISSION TO SUBCONTRACT

Request No._____
Project No._____

To Whom It May Concern:

I (We) (the prime contractor) (a subcontractor) propose to subcontract the following items to _____ _____, named in accordance with Special Provisions providing for subcontracting including in our contract. In the event of your disapproval of this subcontractor or your disapproval of performance of such subcontractor at any time, I (we) agree to perform such items of work with my (our) own organization in full compliance with all applicable terms of our contract. I (We) agree that this procedure will not relieve us of any of the responsibilities under our contract.

It is agreed and understood that the approval or disapproval of the subcontractor and approval or disapproval of the performance of subcontractor does not create or impute any liability or contractual obligation by and between the subcontractor and the City.

I (We) the prime contractor agree that this procedure will not relieve us of any of the responsibilities and obligations of our contract and I (we) shall indemnify and save harmless the City from all claims, demands, suits, damages, costs, and expenses and loss (including attorney's fees) arising or resulting from this subcontract.

I (We) certify that said party is particularly experienced and equipped for such work and that the subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract and that all pertinent conditions and requirements of our contract with the City covering this project have been explained to the proposed subcontractor, and that when applicable federally required contract provisions are physically incorporated into the agreement furnished to the subcontractor.

I (We) agree to furnish you with certified copies of such subcontract evidence in writing upon request.

The prices shown below are the prime contract unit prices:

ITEM	QUANTITY	UNIT	PRIME CONT. UNIT PRICE	EXTENDED AMOUNT
_____	_____	_____	$_____	$_____
_____	_____	_____	$_____	$_____
_____	_____	_____	$_____	$_____
_____	_____	_____	$_____	$_____
_____	_____	_____	$_____	$_____
_____	_____	_____	$_____	$_____

I (We) hereby certify that the persons or firms named above as subcontractors was with the knowledge and consent of the persons or firms named.

Date_____ 20____

_____
Contractor

By:_____

Address:_____

I (We) hereby certify that the use of our names as subcontractors on the above items, was and is with our knowledge and consent.

Date_____20_____

_____
Sub-Contractor

By:_____

Address:_____

Total This Request $_____=_____%
Previous Request $_____=_____%
Total to Date $_____=_____%

Quantities Checked:_____

Approval Recommended:_____20_____

_____
City Engineer

Approved:_____20_____

_____
Mayor

Note: The subcontract items of all sub-contractors shall not exceed 60% of contract exclusive of specialty items. Submit signed original only on all type projects.

Revised: 06/09/2017

SECTION 905-D
NOTICE OF WORK TO BE PERFORMED
IN PROXIMITY OF HIGH VOLTAGE POWER LINES

In accordance with Section 45-15-1, et seq., Mississippi Code of 1972 (as amended effective July 1, 1988), _____ _____ (hereinafter referred to as "Applicant") (Supervisor in Charge: _____ _____), whose address is _____ _____, and whose telephone number is _____ , hereby gives notice to the electric utility (hereinafter referred to as "Utility") that Applicant will be performing functions or activities at the location of _____ _____ and that the estimated starting the date of this work is _____ _____. This work could reasonably be expected to cause persons, equipment or parts of tools or materials to be brought within ten feet (10') of Utility's high voltage lines at the proposed work area. Applicant hereby requests the Utility to confer with Applicant or his representative at the work site to discuss the type of work activity that will take place and to determine if further safety measures need to be taken by either the Applicant or the Utility. The Utility will give the Applicant a written cost estimate for safety arrangements to deter contact with on-site power lines. Applicant agrees not to perform such functions or activities until mutually satisfactory arrangements as provided by Section 45-15-9 have been made to deter contact with Utility's lines.

Nothing contained in this Notice shall diminish or affect the obligation imposed upon the Utility under Section 45-15-1, et seq., or under existing laws or to be construed as a waiver of the Applicant's or the Utility's rights under the law.

NOTICE GIVEN THIS, the ____ day of _____, 20____.

_____
APPLICANT

BY:_____

_____
(Title)

Notice received by the Utility this the _____ day of _____, 20____.

UTILITY COMPANY OR ASSOCIATION:_____

BY:_____

_____
(Title)

Revised: 02/08/2022

CONSTRUCTION AGREEMENT BETWEEN OWNER AND CONTRACTOR ON THE BASIS OF A LUMP SUM

THIS AGREEMENT made as of the _____ day of _____, in the year 2022, by and between the

CITY OF BILOXI, MISSISSIPPI

(hereinafter called OWNER) and

_____

(hereinafter called CONTRACTOR)

WITNESSETH THAT OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE I: WORK

1.01 The intent of the Contract is to provide for the execution, construction, and completion in every detail of the work described, and to compensate the CONTRACTOR for all acceptable work performed in accordance with the provisions of the Contract. The CONTRACTOR shall furnish all labor, materials, equipment, supplies, transportation, supervision, methods and procedures necessary to complete the work in accordance with the specifications and terms of the Contract Documents.

1.02 The CONTRACTOR shall perform all work as specified or indicated in the Contract Documents for the completion of the Project generally described as follows:

0000: _____

1.03 CONTRACTOR represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with, the nature and extent of the Contract Documents, Work locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that may in manner affect the performance of the Work, and represents that he/she has correlated his/her study and observations with the requirements of the Contract Documents.

1.04 Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. He shall at once report in writing to Engineer any conflict, error discrepancy which he may discover; however, he shall not liable to OWNER or Engineer for his failure to discover any conflict, error or discrepancy in the Drawings or Specifications.

ARTICLE II: ENGINEER

2.01 The project has been designed by _____ located at 123 Main Street, Biloxi, Mississippi 39530, who is known as the DESIGN ENGINEER throughout the specifications. The City Engineer for the City of Biloxi Engineering Division will act as ENGINEER in connection with completion of the Project in accordance with the Contract Documents. It is understood that the City Engineer may designate authority to any member of his staff, as he deems necessary.

2.02 The Engineer has the authority to make decisions on all questions that may arise as to the quality and acceptability of materials, the Work, and progress of the Work; all questions that may arise as to the interpretation of plans and specifications; and all questions as to the fulfillment of the Contract.

2.03 The Engineer has the right, but not the obligation, to suspend work wholly or in part and to withhold payments because of the CONTRACTOR'S failure to correct conditions unsafe for workmen or the general public, for failure to carry out provisions of the Contract Documents, or for failures to carry out orders. The Engineer may also suspend Work for periods deemed necessary due to unsuitable weather conditions, for any conditions considered unsuitable for the prosecution of the Work, or for any other condition or reason deemed by the Engineer to be in the public interest. The OWNER shall not be held liable for any conditions that it is not made aware of, and there is no duty on the part of the OWNER to inspect for said unsafe and/or unsuitable conditions. The duty to ensure that the conditions are safe to workmen and the public remains at all times on the CONTRACTOR, and shall not be altered by any course of conduct and/or action or inaction of the OWNER.

2.04 The Engineer will have the authority to enforce and make effective all decisions and orders relating to the Contract Documents.

ARTICLE III: CONTRACT TIME

3.01 The work herein described shall be completed within one hundred (100) Calendar days for the project after the date of the Contract Time commences, also known as the Notice to Proceed Date. This date is established by the date on the Notice to Proceed order.

3.02 The CONTRACTOR shall provide sufficient materials, equipment and labor to guarantee the completion of the project in accordance with the plans and specifications within the Contract Time.

3.03 Percent complete shall be determined by comparing the total money earned to date by the CONTRACTOR, minus any payment for advancement of materials, to the total dollar amount of the Contract. The percentage elapsed time shall be calculated as the direct ratio of the expired Calendar Days to the total Calendar Days provided for in the Contract.

3.04 When the "percent complete" lags more than twenty percent (20%) behind the "percent time lapsed," the Engineer shall notify the CONTRACTOR that they have seven (7) calendar days to submit a written statement and revised progress schedule indicating any additional equipment, labor, materials, etc. to be assigned to the work to ensure completion within the specified Contract Time. Failure to submit the revised schedule may result in withholding of the monthly estimate. When the "percent complete" lags more than forty percent (40%) behind the "percentage of elapsed time," the Contract may be terminated.

3.05 On Calendar Day Contracts, an extension of Contract Time may be granted for unforeseen utility delays, abnormal delays caused solely by the OWNER or other governmental authorities, or unforeseeable disastrous phenomena of nature of the magnitude of earthquakes, hurricanes, named tropical storms, tornadoes, or flooded essential work areas that are deemed to unavoidably prevent prosecuting the work.

3.06 The span of time allowed in the Contract as awarded is based on the quantities used for comparison of bids. If satisfactory fulfillment of the Contract requires performance of work in greater quantities than those set forth in the proposal, the time allowed for completion shall be increased by Calendar Days in the same ratio that the cost of such added work increases the total value of the original Contract. This is exclusive of the cost of work altered by an approved Change Order for which a time adjustment has already been made.

3.07 Additional Contract Time for weather days will be determined using the Keesler AFB monthly climatology report. Additional Contract Time may be approved for any days that have precipitation of 0.5 inches or greater, day for day. Weather days will not be automatically granted, in order to be considered, a request for weather days shall be included in the monthly schedule update submitted with the pay estimate. To justify days in addition to the days reported by the Keesler climatology reports, the Contractor is required to provide an updated schedule showing the impact along with a written narrative and/or pictures with the monthly schedule update.

ARTICLE IV: CONTRACT PRICE

4.01 CONTRACTOR submitted the approved bid for the performance of the work described in the Contract Documents in the total sum of:

_____ (_____)

4.02 The total sum above is based on estimated quantities for each pay item. The actual payment to the CONTRACTOR shall be subject to the actual quantity of approved work performed and the terms and conditions of this Contract. The total Contract price shall not exceed the amount of the approved bid unless otherwise approved by the OWNER.

ARTICLE V: CONTRACT DOCUMENTS

5.01 The Contract Documents, which comprise the Contract between the OWNER and CONTRACTOR, consists of the following documents, which documents are made a part of this agreement as fully as if disclosed and written at length and made a part thereof:

(a) This agreement (Pages 1 through 28, inclusive),

(b) Exhibits to this Agreement,

(c) CONTRACTOR'S Proposal and Bonds,

(d) Notice of Award,

(e) Advertisement, Section 901

(f) Testing and Submittal Requirements

(g) Notice to Bidders, Section 904,

(h) Special Provisions, Section 907,

(i) Technical Specifications, including the Mississippi Standard Specifications for Road and Bridge Construction, 2017 Edition, Excluding Division 900, if applicable,

(j) Drawings consisting of sheet 1 of _____, thru _____ of _____,

(k) Any Addenda to the Contract Documents.

(l) Any modifications, including Change Orders, duly delivered after execution of this Agreement, and

(m) Notice to Proceed.

5.02 The Contract Documents constitute the entire agreement between OWNER and CONTRACTOR and may be only altered, amended or repealed by a duly executed written instrument.

ARTICLE VI: SUBCONTRACTORS

6.01 Neither the OWNER nor CONTRACTOR shall, without the prior written consent of the other, assign or sublet in whole or in part his interest under any of the Contract Documents; and, specifically, CONTRACTOR shall not assign any moneys due or to become due without prior written consent of OWNER.

6.02 CONTRACTOR agrees to procure SUBCONTRACTORS in a fair and nondiscriminatory manner.

6.03 CONTRACTOR shall ensure that each SUBCONTRACT includes all the provisions of this Contract. CONTRACTOR is responsible for monitoring all SUBCONTRACTORS to ensure compliance with the provisions contained herein.

6.04 CONTRACTOR shall not enter into any SUBCONTRACT without the written approval of OWNER.

6.05 Subcontracting does not release CONTRACTOR of bond and Contract liability and shall not be construed to imply that a Contract exists between the OWNER and a third party.

ARTICLE VII: CONTROL OF WORK

7.01 CONTRACTOR shall supervise and direct the work efficiently and with his best skill and attention. He shall be responsible to see that the finished work complies accurately with the Contract Documents.

7.02 CONTRACTOR shall keep on the work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and Engineer except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR. The CONTRACTOR shall furnish in writing the name of his resident superintendent and telephone numbers where he may be reached in the event of emergencies.

7.03 CONTRACTOR shall keep one record copy of all Specifications, Drawings, Addenda, Modifications and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to Engineer and shall be delivered to him for OWNER upon completion of the Project.

7.04 CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work, and at the completion of the Work he shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for use. CONTRACTOR shall restore to their original condition those portions of the site not designated for alteration.

7.05 In case of the suspension of Work from any cause whatever, CONTRACTOR shall be responsible for all material, shall properly store them, if necessary, and shall provide suitable drainage of the area and erect temporary structures where necessary.

7.06 CONTRACTOR shall confine his equipment, the storage of materials and equipment and the operations of his workmen to areas permitted by law, ordinances, permits or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment. CONTRACTOR shall not enter or occupy with men, tools, or material any private ground without the consent of the owner of said private property.

ARTICLE VIII: CONTROL OF MATERIALS

8.01 CONTRACTOR shall furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliance, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of the Work.

8.02 All materials and equipment shall be new, except as otherwise provided in the Contract Documents. If required by Engineer, CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

8.03 All materials and equipment shall be applied, installed, connected, erected, raised, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors, except as otherwise provided in the Contract Documents.

8.04 For all manufactured articles, units, components, or materials incorporated in the work completed under this Contract, CONTRACTOR shall furnish the manufacturer's warranties, guarantees, instruction sheets, and technical specification sheets before final acceptance of work.

8.05 All materials not conforming to the requirements of the specifications at the time they are incorporated in the Work shall be rejected and removed immediately unless otherwise instructed by the Engineer.

8.06 In compliance with the laws of the State of Mississippi, in choosing materials for the project, the successful bidder shall be required to give preference to materials grown, produced, prepared, made or manufactured within the State of Mississippi. The foregoing notwithstanding, no preference shall be given to materials grown, produced, prepared, made or manufactured in the State of Mississippi when other materials of like quality produced outside the State of Mississippi may be purchased or secured at less cost, or any other materials of better quality produced outside the State of Mississippi can be secured at a reasonable cost.

8.07 The CONTRACTOR shall not use any materials on the project that are grown, produced, prepared, made or manufactured outside the United States.

8.08 Any materials to be used as a substitute to any material specified in the Contract shall be approved by the Engineer, or his authorized representative, prior to use. The

CONTRACTOR shall be responsible for submitting all information needed by the Engineer to show all properties, characteristics, test reports, etc. to make an informed decision as to the compliance of the proposed material with the Contract.

8.09 CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by him in accordance with the law of the place where the Work is to be performed.

8.10 CONTRACTOR warrants and guarantees that all materials and equipment will be new unless otherwise specified and that all Work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents and of any inspections, tests or approvals referred to in the Technical Specifications.

8.11 All tests, inspections and submittals shall be submitted to the OWNER in accordance with the Technical Specifications.

ARTICLE IX: PROGRESS SCHEDULE

9.01 The CONTRACTOR shall submit a progress schedule to the City Engineer or his authorized representative for his approval no later than three (3) working days after the Notice to Proceed date. The schedule will be in the form of a bar graph indicating the controlling phases of work, the bid sheet sequence numbers of all pay items in each phase, and the beginning and the ending time for each phase. At least one phase of work will be shown to begin no later than the date for beginning of Contract Time, and at least one phase of work will be shown to be in progress until all work is scheduled to be complete. The schedule shall indicate the sequence and interdependency of all Work activities.

9.02 The CONTRACTOR'S progress schedule shall reflect a realistic rate of prosecution with all work to be completed within the specified Contract Time. In preparation of his progress schedule, the CONTRACTOR shall take into consideration all controlling factors and specified limitations. The schedule shall show work broken down by street name (if applicable) and then by station number so that a logical progress of work can be followed.

9.03 An approved progress schedule shall be in effect until the date on which a revised schedule is approved. The approved progress schedule will be the basis for establishing major construction operations, Contract Time assessment, and for checking the progress of the work.

9.04 On projects with a Contract Time of more than eight (8) months, an updated progress schedule shall be delivered to the OWNER with each pay request. Failure to submit an up to date progress schedule shall stop the pay estimate process. The pay estimate will be held or returned to the CONTRACTOR until an updated schedule is submitted. Any revisions to the progress schedule shall be submitted to the OWNER for approval.

9.05 Monthly schedule updates shall include the following:

(a) Activity Status Report

(b) Proposed Revisions (or changes in construction sequence) Report

(c) Narrative Report containing the following information:

(i) Description of overall Project status

(ii) Description of problem areas

(iii) Current and anticipated delays to include the cause of delay; corrective action and adjustments of schedule to correct the delay; and any known or potential impact of the delay on other activities or milestones

(iv) Pending items and status thereof, including but not limited to:

1) Pending Change Orders that include time extensions

2) Other Issues relating to Contract Time (weather, material delivery, etc.)

(v) Contract Completion Date Status:

1) If ahead of schedule, note the number of calendar days ahead

2) If behind schedule, note the number of calendar days behind

(vi) Any Other Project or Schedule Issues/Concerns

9.06 Whenever it becomes apparent from the current monthly updated Schedule that the Contract completion date will not be met, the CONTRACTOR agrees that they will take some or all of the following actions. However, these actions must first be reviewed and approved by the OWNER. These actions will be taken by the CONTRACTOR at NO additional cost to the OWNER.

(a) Increase construction manpower to eliminate the backlog of work.

(b) Increase the number of hours worked per day and/or shift, increase the number of days worked per week, etc. However, this shall not be construed as permitting the CONTRACTOR to violate the OWNER'S work hour restrictions per Ordinance.

(c) Reschedule activities to expedite the work and eliminate the backlog of work.

9.07 Any requests for an adjustment in Contract Time shall be submitted by the CONTRACTOR in writing and shall include a Time Impact Analysis. Each Time Impact Analysis shall provide information justifying the request and stating the extent of the

adjustment requested for each specific change or alleged delay. This analysis shall be done at no additional cost to the OWNER.

ARTICLE X: CHANGES TO WORK

10.01 OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, CONTRACTOR shall proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price, or an extension or shortening of the Contract Time, an equitable adjustment will be made.

10.02 Engineer may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. If CONTRACTOR believes that any minor change or alteration authorized by Engineer entitles him to an increase in the Contract Price, CONTRACTOR may make a claim as provided by law.

10.03 Additional Work performed by CONTRACTOR without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time.

10.04 CONTRACTOR will provide immediate notification to the Engineer upon discovering a condition that may require a change to the Contract Documents. The notification will include (1) a description of the condition, including the time and date it was identified; (2) an explanation of why the condition represents a change to the Contract Documents; and (3) a statement of all changes considered necessary to the Contract Price and Contract Time.

ARTICLE XI: ACCEPTANCE OF WORK

11.01 OWNER will monitor the performance of CONTRACTOR against goals and performance standards required herein. Substandard performance as determined by OWNER will constitute non-compliance with this agreement. If action to correct such substandard performance is not taken by CONTRACTOR within a reasonable period of time as determined by the OWNER after being notified by OWNER, Contract suspension or termination procedures will be initiated.

11.02 All materials and parts or detail of the work are subject to inspection by the Engineer. The Engineer shall be allowed access to all of the Work and shall be furnished with such information and assistance by the CONTRACTOR as necessary to make a complete and detailed inspection.

11.03 Unacceptable work, whether the result of poor workmanship, defective materials, damage through carelessness or any other cause, found prior to final acceptance of work shall be removed and replaced in an acceptable manner at no additional cost to the OWNER.

11.04 Engineer will have authority to disapprove or reject Work which is "defective," which term is hereinafter used to describe Work that is unsatisfactory, faulty, or defective, or does not conform to the requirements of the Contract Documents, or does not meet the requirements of any inspection, test or approval, or has been damaged prior to approval of final payment. Engineer will also have authority to require a special inspection or testing of the Work, whether or not the Work is fabricated, installed or completed.

11.05 Until the acceptance of the work by Engineer, as evidenced in writing, it shall be under the charge and care of CONTRACTOR. He shall take every necessary precaution against damages to any party thereof by the action of the elements or from any other cause whether arising from the execution or from the non-execution of the work. Before final acceptance, CONTRACTOR shall at his expense rebuild, restore, repair and make good at his own expense all injuries or damages to any portion of the Work occasioned by any of the above causes.

ARTICLE XII: LIQUIDATED DAMAGES

12.01 If the CONTRACTOR fails to complete the Work within the Contract Time and all approved Change Orders, a deduction calculated from the daily charges listed in the below schedule will be made from money due to the CONTRACTOR, not as penalty but as liquidated damages. The daily charges set out in the schedule of liquidated damages are based on an approximated average cost to the OWNER for maintaining engineers, inspectors and other employees. The CONTRACTOR and the CONTRACTOR'S Sureties shall be liable for all liquidated damages in excess of money due the CONTRACTOR.

Original Contract Amount		
From More Than	**To and Including**	**Daily Charge Per Calendar Day**
$ 0.00	$100,000.00	$150.00
$100,000.00	$500,000.00	$360.00
$500,000.00	$1,000,000.00	$540.00
$1,000,000.00	$5,000,000.00	$830.00
$5,000,000.00	$10,000,000.00	$1,200.00
$10,000,000.00	$20,000,000.00	$1,800.00
$20,000,000.00	----------	$3,500.00

ARTICLE XIII: PERMITS

13.01 CONTRACTOR is responsible for any permits, and is required to comply with all codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.

ARTICLE XIV: BONDS

14.01 Within ten (10) days of receiving the Notice of Award, the CONTRACTOR shall execute and deliver to the OWNER a performance bond or bonds in a sum equal to the full Contract Price. The form of the bond(s) shall be that provided by the OWNER. The bond shall be negotiated for, procured from and the premium paid to a qualified surety agent as listed below. The bonds may be made by any surety company which is authorized to do business in the State of Mississippi and listed on the United States Treasury Department's list of acceptable sureties, or such bonds may be guaranteed by a personal surety as otherwise provided for in the Mississippi Code of 1972 as referenced below. The bond shall be signed or countersigned by a qualified surety agent and also bear the signature of an "attorney-in-fact" of the surety. (Reference is made to Section 31-5-51 et seq. of the Mississippi Code of 1972, Annotated, and other State statutes applicable thereto).

14.02 Except as otherwise provided herein, for a personal surety, no surety or surety company shall be allowed to guarantee or write bonds or construction, alteration or repair of a public building or for public work, unless that surety is listed on the United States Treasury Department's list of acceptable sureties.

14.03 If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located, or is revoked, CONTRACTOR shall within five (5) days thereafter substitute another Bond and Surety, both of which shall be acceptable to OWNER.

14.04 Failure of the CONTRACTOR to provide an acceptable bond and all fully executed Contract Documents, within twenty (20) days of the mailing of the Notice of Award shall be just cause for the cancellation of the Contract. In the event the Contract is cancelled due to the failure of the CONTRACTOR to timely provide the bond and all fully executed Contract Documents, the CONTRACTOR'S proposal guaranty shall be forfeited. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised at the discretion of the OWNER.

14.05 It is CONTRACTOR'S responsibility to notify his Surety of any changes affecting the general scope of the Work. CONTRACTOR shall furnish proof of such adjustment to OWNER.

ARTICLE XV: LEGAL RELATIONS

15.01 CONTRACTOR represents that he has made himself familiar with all state laws and local

ordinances and regulations which in any manner affect those engaged or employed in the Work or the material or equipment used in the proposed construction or which in any way affect the conduct of the work and no plea of misunderstanding will be considered on account of ignorance thereof.

15.02 The CONTRACTOR shall procure all permits, and licenses, pay all charges, fees and taxes and issue all notices necessary and incidental to the due and lawful prosecution of the work.

15.03 CONTRACTOR agrees to comply with the Title VI of the Civil Rights Act of 1964 as amended, Title VIII of the Civil Rights Act of 1968 as amended, Section 109 of Title I of the Housing and Community Development Act of 1974, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Executive Order 11063, and with Executive Order 11246 as amended by Executive Orders 11375 and 12086.

15.04 CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, creed, religion, ancestry, national origin, sex, disability or other handicap, age, marital status, or status with regard to public assistance. CONTRACTOR will take affirmative action to ensure that all employment practices are free from such discrimination. Such employment practices include but are not limited to the following: hiring, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting agency setting forth the provisions of this nondiscrimination clause.

15.05 CONTRACTOR agrees to comply with the requirements of the Secretary of Labor in accordance with the Davis-Bacon Act as amended, the provisions of Contract Work Hours, the Hatch Act, the Safety Standards Act, the Copeland "Anti-Kickback" Act (40 U.S. C. 276, 327-333) and all other applicable federal, state and local laws and regulations pertaining to labor standards insofar as those acts apply to the performance of this Contract. CONTRACTOR shall maintain documentation, which demonstrates compliance with hour and wage requirements of this part. Such documentation shall be made available to OWNER for review upon request.

15.06 Where employees are engaged in activities not covered under the Occupational Safety and Health Act of 1970, they shall not be required or permitted to work, be trained, or receive services in buildings or surroundings or under working conditions, which are unsanitary, hazardous or dangerous to the participants' health or safety.

15.07 Participants employed or trained for inherently dangerous occupations, shall be assigned to work in accordance with reasonable safety practices.

15.08 CONTRACTOR agrees to comply with the following regulations insofar as they apply to the performance of this Contract (applies to Contracts or subcontracts in excess of $100,000):

(a) Clean Air Act, 42 U.S.C., 1857, et seq. (Amended to 42 U.S.C., 7602, et. seq.)

(b) Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251, et seq., as amended 1368 relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.

(c) Environmental Protection Agency (EPA) regulations pursuant to 40 C.F.R., Part 15, as amended.

ARTICLE XVI: PUBLIC CONVENIENCE AND SAFETY

16.01 The CONTRACTOR shall provide and maintain adequate sanitation facilities for the use of his employees. The location of such accommodations shall be subject to the prior approval of the Engineer.

16.02 The CONTRACTOR shall be responsible for the preservation of public and private property. The CONTRACTOR shall be responsible for all damage or injury to public or private property resulting from any act, omission, neglect, misconduct, inefficiency, method of executing the work, or non-execution thereof or due to defective work or materials.

16.03 CONTRACTOR shall restore each job site at his own expense to a condition equal to that existing before the damage or injury. In the case of failure on the part of the CONTRACTOR to restore or make good such damage or injury, the Engineer may, upon forty-eight (48) hours written notice, proceed to repair, rebuild or otherwise restore such property and the cost thereof shall be deducted from monies due to which may become due the CONTRACTOR. In the event no monies are available, the amount shall be charged against the CONTRACTOR'S Surety.

16.04 CONTRACTOR shall require all workers to wear long pants, shirt, and shoes or boots at all times on the job site.

16.05 In the event of an approaching tropical storm, hurricane, etc., the CONTRACTOR shall, at the direction of the Engineer or his authorized representative, prepare the job site by securing any and all materials, equipment, etc. This includes anchoring any job trailer if it is to stay on the site during the storm. The CONTRACTOR shall assure the Engineer that the building is secure and watertight. The CONTRACTOR shall absorb all associated costs.

ARTICLE XVII: PROGRESS AND FINAL PAYMENTS

17.01 The compensation, as herein provided, constitutes full payment for the complete Work

including all materials, labor, tools, equipment and incidentals necessary for performing the Work under this Contract.

17.02 CONTRACTOR shall submit pay requests in accordance with the section entitled "City of Biloxi Testing and Submittal Requirements" of the specification. All applications for payment shall be certified by the CONTRACTOR that to the best of CONTRACTOR'S knowledge, information and belief, the Work covered by the application for payment has been completed in accordance with the Contractor Documents, that all amounts have been paid by the CONTRACTOR for Work for which previous Certificates for Payment were issued and payments received for the OWNER, and that that the current payment shown in the pay application is now due. In addition, all applications for payment shall include certification to the project engineer or architect indicating payments to subcontractors on prior payment request, as required by Miss. Code of 1972, §31-5-25.

17.03 OWNER shall make progress payments on the basis of CONTRACTOR'S application for payment as approved by the ENGINEER during the course of this agreement. All progress payments will be on the basis of the approved progress of the work completed and stored to date measured by the schedule of values.

17.04 All partial, progress or interim payments or monies owed to CONTRACTOR shall be paid when due and payable under the terms of the Contract. If they are not paid within forty-five (45) calendar days from the date approved by the OWNER, then they shall bear interest in accordance with §31-5-24 of the Mississippi Code of 1972, Annotated.

17.05 The Engineer may refuse to approve the whole or any part of any payment if, in his opinion, he is unable to make such representations to the OWNER. Engineer may also refuse to approve any such payment, or because of subsequently discovered evidence or the result of subsequent inspection or tests, nullify any such payment, or any part of any payment, previously approved to such extent as may be necessary in his opinion to protect the OWNER from loss because:

(a) Completed Work or existing property has been damaged by the CONTRACTOR or his Subcontractors, requiring replacement or repair;

(b) The Work for which payment is requested cannot be verified or was not verified by the OWNER at the time of payment, but subsequent verifications revealed discrepancies;

(c) The Engineer or his authorized representative verifies the Work and the OWNER pays for the Work, but subsequent discoveries reveal discrepancies between the Contract and the payment;

(d) Claims or Liens have been filed, or there is reasonable evidence indicating the probable filing thereof;

(e) The Task price has been reduced because of Modifications;

(f) The OWNER has been required to correct defective Work, complete the Work, or maintain traffic control due to unsafe conditions;

(g) Of unsatisfactory prosecution of the Work, including failure to clean up the job site;

(h) Of persistent failure to carry out the Work in accordance with the Contract Documents;

(i) Of liquidated damages payable by the CONTRACTOR; or

(j) Of any other violation thereof, or failure to comply with, the provisions of the Contract Documents.

17.06 If, on the basis of Engineer's observation and review of the Work during construction, his inspection and his review of the Application for Payment, Engineer is satisfied that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract and has made all corrections to remedy deficiencies in the Work, then the Engineer shall approve payment. Otherwise, he will return the application to CONTRACTOR, indicating in writing his reasons for refusing to approve payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

ARTICLE XVIII: RETAINAGE

18.01 Prior to fifty percent (50%) completion, progress payments will be in an amount equal to ninety-five percent (95%) of the work completed, and ninety-five percent (95%) of material and equipment not incorporated in the work but delivered and suitably stored, less than each case the aggregate of payments previously made.

18.02 Once fifty percent (50%) project completion has been obtained, but prior to final completion, progress payments will be in an amount equal to ninety-seven and one-half percent (97.5%) of the work completed, and ninety-seven and one-half percent (97.5%) of material and equipment not incorporated in the work but delivered and suitably stored, less than each case the aggregate of payments previously made; provided that the project is on schedule and all work is satisfactory in the opinion of the City Engineer. At fifty percent (50%) project completion, as described above, fifty percent (50%) of the retainage held to date shall be returned.

18.03 Upon final completion of the work and settlement of all claims, OWNER shall pay the remainder of all completed work plus any and all retainage provided the CONTRACTOR has submitted the Record Drawings.

18.04 When the Work is finally completed, the total cost to the OWNER will be computed. If the total cost is greater than the cost allowed under the Contract, the extra expense will be

the responsibility of the original CONTRACTOR'S Surety. If the total cost is less than the cost which would have resulted under the Contract, the savings will be paid to the original CONTRACTOR'S Surety.

ARTICLE XIX: FINAL ACCEPTANCE & WARRANTIES

19.01 Upon written notice from the CONTRACTOR of substantial completion of all the major items of work or upon due notice from the Engineer a final inspection will be made by the City Engineer or his authorized representative. If all work provided by the Contract has been completed to his satisfaction, that inspection will constitute the final inspection. If the inspection discloses any work as being unsatisfactory or incomplete, the City Engineer or his authorized representative will discuss in detail with the CONTRACTOR all discrepancies in the work. Upon correction of the work, another inspection will be made which shall constitute the final inspection provided the work has been satisfactorily completed.

19.02 Prior to final payment being made, the CONTRACTOR will be required to submit to the City Engineer or his authorized representative, a maintenance guarantee to ensure against defects in workmanship or materials for a time period of two years from the date of final payment with the City of Biloxi named as the sole beneficiary. The guarantee shall be in any of the following acceptable forms:

(a) Certified check from a Mississippi lender based upon a cash deposit, in a form acceptable to the City Attorney;

(b) Irrevocable letter of credit from a Mississippi banking institution in a form acceptable to the City Attorney; or

(c) Surety bond from a Mississippi surety bonding company in a form acceptable to the City Attorney.

19.03 CONTRACTOR shall guarantee all work under Contract for a period of two (2) years after the date of final payment by the OWNER for this project (the "Warranty Period").

19.04 If, prior to the expiration of the Warranty Period, or such a longer period of time as may be prescribed by law, any work is found to be defective, CONTRACTOR shall promptly without cost to the OWNER and in accordance with OWNER'S written instructions, either correct such defective work, or, if it has been rejected by the OWNER, remove it from the site and replace it with corrected work. If the CONTRACTOR does not promptly comply with the terms of such instructions, the OWNER may have the defective work corrected or the rejected work removed and replaced and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid for by funds generated through the maintenance guarantee shall be conditioned on the performance of all work necessary to warranty required public infrastructure improvements during the term of the maintenance guarantee, including work needed to repair or replace

defects in workmanship or defective materials. Maintenance guarantees shall provide that in case of the CONTRACTOR'S failure to repair or replace the guaranteed work during the term on the maintenance guarantee, the OWNER shall be able to immediately obtain the funds necessary to make such repairs or replacements, including but not limited to costs associated with labor, equipment and materials.

19.05 Maintenance guarantee shall be dependent on the total value of the Contract a minimum amount as shown in the table below:

Amount of Construction Contract	**Required Bond Value**
$0 - $2,500,000	$250,000
$2,500,000 - $5,000,000	$500,000
$5,000,000 - $10,000,000	$750,000
$10,000,000 - $25,000,000	$1,000,000
$25,000,000 - $50,000,000	$1,500,000
$50,000,000 - $75,000,000	$2,000,000
$75,000,000 - $100,000,000	$2,500,000
$100,000,000 - >$150,000,000	$3,000,000

19.06 The City Engineer shall release the maintenance guarantee at the end of the term of the guarantee only after an inspection of the work has been performed and work performed under the Contract is shown to be in proper working order.

19.07 In the event a bond is used as the guarantee, the form of the bond shall be that acceptable to the OWNER. The bond shall be negotiated for, procured from and the premium paid to a qualified surety agent as listed below. The bonds may be made by any surety company which is authorized to do business in the State of Mississippi and listed on the United States Treasury Department's list of acceptable sureties, or such bonds may be guaranteed by a personal surety as otherwise provided for in the Mississippi Code of 1972 as referenced below. The bond shall be signed or countersigned by a qualified surety agent and also bear the signature of an "attorney-in-fact" of the surety. (Reference is made to Section 31-5-51 et seq of the Mississippi Code of 1972, Annotated, and other State statutes applicable thereto).

19.08 Except as otherwise provided herein, for a personal surety, no surety or surety company shall be allowed to guarantee or write bonds for construction, alteration or repair of a public building or for public work, unless that surety is listed on the United States Treasury Department's list of acceptable sureties.

19.09 When the Work is finally completed, the total cost to the OWNER will be computed. If the total cost is greater than the cost which would have resulted under the Contract, the extra expense will be the responsibility of the original CONTRACTOR'S Surety. If the total cost is less than the cost which would have resulted under the Contract, the savings will be paid to the original CONTRACTOR'S Surety.

19.10 The final payment will not be issued until after the final as-built drawings have been submitted, reviewed for accuracy and accepted. Final as-built drawings must be provided in both digital and hard copies. Digital files shall consist of a complete .PDF of the as-built drawings as well as the CADD files (.dgn, .dwg or .dxf format; Microstation or AutoCAD, latest versions acceptable to the OWNER). One (1) full-size hard copy shall also be provided. A digital copy of the original design drawings is available upon request.

19.11 As-built drawings in digital format shall have all field changes incorporated into the original Contract drawings. Hard copies of as-built drawings shall show the redlined field changes on the original Contract drawings. Redlines on hard copies shall stand out by color.

ARTICLE XX: RECORDS

20.01 All CONTRACTOR records with respect to any matters covered by this agreement shall be made available to OWNER, grantor agency, the Comptroller General of the United States, their designees or the Federal Government, at any time during normal business hours, as often as OWNER or grantor agency deems necessary, to audit, examine, and make excerpts or transcripts of all relevant data. Any deficiencies noted in audit reports must be fully cleared by CONTRACTOR within thirty (30) days after receipt by CONTRACTOR. Failure of CONTRACTOR to comply with the above audit requirements will constitute a violation of this Contract and may result in the withholding of future payments.

20.02 CONTRACTOR shall retain all records pertinent to expenditures incurred under this Contract for a period of three (3) years after the termination of all activities funded under this agreement, or after the resolution of all Federal Audit Findings, whichever occurs later.

20.03 CONTRACTOR shall retain all records pertinent to subcontracts incurred under this Contract for a period of three (3) years after the termination of all activities funded under this agreement, or after the resolution of all Federal audit findings, whichever occurs later. Records for non-expendable property acquired with funds under this Contract shall be retained for three (3) years after final disposition of such property.

ARTICLE XXI: INSURANCE REQUIREMENTS

21.01 CONTRACTOR shall carry:

(a) Commercial general liability insurance coverage (including subcontractors) with limits not less than $1,000,000 each occurrence; $2,000,000 aggregate (aggregate applies to all work under this Contract); automobile liability - $1,000,000 combined single limit-each accident;

(b) Workers' Compensation and Employers' Liability with a waiver subrogation in favor of the City of Biloxi - Statutory & $100,000 each accident; $100,000 each

employee; $500,000 policy limit.

21.02 Each policy shall be signed or countersigned by a Mississippi Resident Agent of the insurance company.

21.03 CONTRACTOR further indemnifies and saves the OWNER harmless from and against any loss, damage and liabilities occasioned by, growing out of, or resulting from any default hereunder, relating to the execution of this agreement.

21.04 The CONTRACTOR shall name the City of Biloxi as an additional insured on the Certificate of Insurance furnished to the OWNER from the Insurance Company providing the required coverage. The certificate(s) shall be on the form furnished by the OWNER and will show the types and limits of coverage.

21.05 The CONTRACTOR shall purchase and maintain, in a company or companies lawfully authorized to do business in the State of Mississippi, property insurance written on a builder's risk "all-risk" policy in the amount of the Contract Price plus value of subsequent Change Orders, comprising total value for the entire Project at the site on a replacement cost basis. Such property insurance shall be maintained until the date of final payment. This insurance shall include coverage of the City of Biloxi, the CONTRACTOR, and Subcontractors in the Project. The form of policy for this coverage shall be Completed Value. If the CONTRACTOR fails to maintain such insurance, then the CONTRACTOR shall bear all repair costs to the project.

21.06 When any portion of the work to be completed under this Contract shall be performed on the navigable waters of the United States or in adjoining waterfront areas, CONTRACTOR shall provide evidence of coverage for The United States Longshore and Harbor Workers' Compensation Act with an insurance company rated by A.M. Best Company not less than A-X that is licensed and admitted to operate in the State of Mississippi.

21.07 Providing the types of insurance coverage to be described herein does not reduce nor relieve CONTRACTOR from his responsibility for any losses not covered by insurance.

ARTICLE XXII: TERMINATION OF CONTRACT

22.01 OWNER may terminate this Contract at any time by giving written notice to CONTRACTOR of such termination and specifying the effective date thereof. Partial terminations of the Specifications or Proposal Document may only be undertaken with the prior approval of OWNER. In the event of any termination for convenience, all finished or unfinished documents, data, studies, surveys, maps, models, photographs, reports or other materials prepared by CONTRACTOR under this agreement shall, at the option of OWNER, become the property of OWNER, and CONTRACTOR shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents or materials prior to the termination. Upon termination for convenience, the payment made to CONTRACTOR will be based upon approved units completed. OWNER

may also suspend or terminate this Agreement, in whole or in part, if CONTRACTOR materially fails to comply with any term of this Agreement, or with any of the rules, regulations or provisions referred to herein; and OWNER may declare CONTRACTOR ineligible for any further participation in OWNER Contracts, in addition to other remedies as provided by law. In the event there is probable cause to believe CONTRACTOR is in noncompliance with any applicable rules or regulations, OWNER may withhold up to fifteen (15) percent of said Contract funds until such time as CONTRACTOR is found to be in compliance by OWNER, or is otherwise adjudicated to be in compliance.

22.02 The Contract may be terminated for default by the OWNER for any of the following reasons:

(a) Failure to proceed with the Work when so instructed by the OWNER or to adhere to the requirements of the Contract.

(b) Failure to perform the Work with sufficient workmen, equipment and materials to assure completion within Contract Time.

(c) Performing unacceptable Work, or neglecting or refusing to remove materials or to perform anew such Work as may be rejected as unacceptable.

(d) Discontinuing the prosecution of Work.

(e) Violation of labor provisions and special regulations.

(f) Becoming insolvent, being declared bankrupt or committing any act of bankruptcy or insolvency.

(g) Allowing a final judgment to stand unsatisfied.

(h) Failure for any other cause whatsoever to carry on work in an acceptable manner.

22.03 Before the Contract is terminated, the CONTRACTOR and the Surety will be notified in writing by the OWNER of the conditions which make termination of the Contract imminent. If no effective effort has been made by the CONTRACTOR or his Surety to correct the conditions of which complaint is made within fifteen (15) calendar days after notice is given, the OWNER may declare the Contract terminated and notify the CONTRACTOR and his Surety accordingly.

22.04 Upon receipt of notice from the OWNER that the Contract has been terminated the CONTRACTOR shall immediately discontinue all Work under the Contract.

22.05 After termination the OWNER will order the Surety to arrange for the prosecution of the Work. If the Surety does not proceed with the satisfactory prosecution of the work within twenty (20) calendar days from the date on which the Contract was terminated, the

OWNER may proceed in any other lawful manner which will provide for the completion of the Work as planned. The Surety or the OWNER, at the Surety's expense will perform or arrange for necessary maintenance between the date of termination and the date that Work is resumed.

ARTICLE XXIII: INDEMNIFICATION

23.01 CONTRACTOR will indemnify and hold harmless OWNER, Engineer and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting there from omission of CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

23.02 In any and all claims against OWNER and Engineer or any of their agents or employees by any employee of CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 23.01 above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

23.03 CONTRACTOR shall, at its sole cost, defend all suits brought upon by such losses, and pay all costs and expenses incidental thereto, but the OWNER, or any of Indemnified Parties, so sued shall have the right at its/their option, to participate in the defense of any such suit, without relieving CONTRACTOR of any obligations hereunder.

23.04 CONTRACTOR'S obligations to indemnify under this Agreement shall survive termination or expiration of this Agreement.

ARTICLE XXIV: DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

(a) Agreement - The written agreement between Owner and Contractor covering the Work to be performed; other Contract Documents are attached to the Agreement.

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

(c) Bidder - Any person, firm or corporation submitting a Bid for the Work.

(d) Bonds - Bid, performance and payment bonds and other Instruments of security, furnished by Contractor and his surety in accordance with the Contract Documents.

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

(f) Contract Documents - The Agreement, Addenda (whether issued prior to the opening of Bids or the execution of the agreement), Instructions to Bidders, Contractor's Bid, the Bonds, the Notice of Award, these General Conditions, the Supplementary Conditions, the Specifications, Drawings, Modifications, Notices to Proceed and Purchase Orders.

(g) Contract Price – The price provided for in the Contract for a specifically described unit of work.

(h) Contract Time – The period of time beginning upon execution of the Agreement between Owner and Contractor and continuing through until termination of the Agreement, including any option to extend the time.

(i) Contractor - The person, firm or corporation with whom Owner has executed the Agreement.

(j) Day – A calendar day is defined as any day shown in the calendar beginning and ending at midnight.

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

(l) Engineer - The person, firm or corporation named as such in the Agreement or the City Engineer for Biloxi, Mississippi.

(m) Modification - (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order, (c) a written clarification or interpretation issued by Engineer, or (d) a written order for a minor change or alteration in the Work issued by Engineer. A Modification may only be issued after execution of the Agreement.

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

(o) Notice to Proceed - A written notice given by Owner to Contractor fixing the date on which the Contract Time will commence to run and on which Contractor shall start to perform his obligations under the Contract Documents on a specific segment of Work.

(p) Owner - A public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed.

(q) Project - The entire construction to be performed as provided in the Contract Documents.

(r) Resident Project Representative - The authorized representative of Engineer who is assigned to the Project site or any part thereof.

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

(t) Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work.

(u) 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.

(v) Substantial Completion - The date as certified by Engineer when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it was intended; or if there be no such certifications, the date when final payment is due.

(w) Warranty Period – the period of time beginning on the date of OWNER's final payment to CONTRACTOR for this Project and extending for two (2) years from that date, during which CONTRACTOR shall guarantee all work under this Contract.

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

ARTICLE XXV: MISCELLANEOUS

25.01 Remedies upon Default. Termination by either party of this Agreement shall not limit or otherwise effect the remedies of the non-defaulting or non-breaching party against the defaulting or breaching party. In the event that either party is in material default under any of the terms or conditions of this Agreement or has materially breached any of its representations of warranties in this Agreement, the non-defaulting or non-breaching party shall be entitled to pursue, in addition to any remedies specifically provided herein, all

further remedies then available at law or in equity.

25.02 Successors and Assigns. The OWNER and CONTRACTOR each bind itself and its partners, successors, executors, administrators, and assigns to the other party of this Agreement and to the partners, successors, executors, administrators, and assigns, or such party, in respect to all covenants of this Agreement. Nothing expressed or referred to in this Agreement shall be construed as creating any personal liability on the part of any officer or agent of any public body, which may be a party hereto, nor shall it be construed as giving any rights, legal or equitable, benefits, remedies, or claims under or with respect to this Agreement or any provision of this Agreement, to anyone other than the OWNER and CONTRACTOR.

25.03 Relationship of the Parties. CONTRACTOR'S relationship with the OWNER is that of an independent Contractor, and nothing in this Agreement is intended to, or shall be construed as creating a partnership, agency, joint venture, employment or similar relationship.

(a) CONTRACTOR acknowledges that it and all its officers, employees, and agents is/are not an employee or agent of the OWNER for any purpose whatsoever. CONTRACTOR shall be responsible for all applicable I-9 and work eligibility verification, earnings reports and tax payments to government agencies, such as the U.S. Internal Revenue Service and the Social Security Administration including payment of all wages due its employees, insurance premiums, license fees, fingerprinting costs, outfitting expenses, and all other obligations and/or expenses of CONTRACTOR relative to its employees in performance of the duties under this Agreement.

(b) CONTRACTOR acknowledges that its personnel are not entitled to receive any of the fringe benefits received by the OWNER's employees, including but not limited to, Workers' Compensation Insurance.

(c) CONTRACTOR shall not have the authority to enter into any Contract on the OWNER's behalf, or to otherwise bind the OWNER to any agreement, unless expressly authorized to so do in writing.

(d) Because CONTRACTOR is an independent Contractor, the OWNER has no direction or control over Services to be performed hereunder, nor over CONTRACTOR'S personnel, and CONTRACTOR shall at all times remain the employer of its personnel performing the Services (and shall be liable for each of their actions, omissions or breaches). CONTRACTOR shall indemnify the OWNER from any claim made by any of CONTRACTOR'S personnel against the OWNER alleging rights or benefits as an employee of the OWNER.

25.04 Copyrights & Patents. If this Contract results in any copyrightable or patentable material, OWNER and/or grantor agency reserves the right to royalty-free, non-exclusive and

irrevocable license to reproduce, publish or otherwise use and to authorize others to use, the work for government purposes.

25.05 Non-Discrimination. All persons having a Contract with the City of Biloxi must adhere to the OWNER's policy concerning non-discrimination on the basis of race, color, religion, sex, age, sexual orientation, gender identity, national origin, veteran or disability status.

25.06 Notices. All notices, consents, waivers and other communications required or permitted by this Agreement shall be in writing and shall be deemed given to a party when (a) delivered to the appropriate address by hand or by nationally recognized overnight courier service (costs prepaid); or (b) received or rejected by the addressee, if sent by certified mail, return receipt requested, addressed and marked to the attention of the person (by name or title) designated below (or to such other address or person as a party may designate by notice to the other parties)

OWNER:
The City of Biloxi, Mississippi:
Attention: Mayor A. M. Gilich, Jr.
140 Lameuse Street
Biloxi, Mississippi 39530

With mandatory copies to:

City of Biloxi, Mississippi
City Attorney / Contract Manager
Post Office Box 429
Biloxi, Mississippi 39533

CONTRACTOR:

_____
Attention: John Doe
_____

25.07 Governing Law and Jurisdiction.

(a) Governing Law. The laws of the state of Mississippi shall govern the application and interpretation of this Agreement.

(b) Jurisdiction. The courts located in Harrison County, Mississippi, Second Judicial District, shall have exclusive jurisdiction of any dispute between the parties. If one party initiates an action against the other or should a party seek any form of relief against the other, then said action shall be filed in Harrison County, Mississippi,

Second Judicial District. Any business or person doing business with the OWNER submits to the personal jurisdiction of the courts in Harrison County, Mississippi.

25.08 Amendments. This Agreement may not be altered or amended, nor may rights hereunder be waived, except by writing executed by both parties.

25.09 Assignability. CONTRACTOR may not assign any of its rights or delegate any of its obligations under this Agreement without the prior express written consent of the OWNER. Subject to the preceding sentence, this Agreement will apply to, be binding in all respects upon and inure to the benefit of the successors and permitted assigns of the CONTRACTOR.

25.10 No Waiver of Warranties. Notwithstanding any provisions to the contrary that may be found in this Agreement or any other supplemental terms that may be referenced therein, any provision that seeks to limit the OWNER's recovery resulting from a breach of express or implied warranties shall be of no force or effect.

25.11 No Waiver of Damages. Notwithstanding any provisions to the contrary that may be found in the Agreement, or any other supplemental terms that may be referenced therein, any provision that seeks to limit the OWNER's recovery in any manner shall be of no force or effect.

25.12 Waiver of Jury Trial. The OWNER shall not be subject to the terms of any provision or any supplemental terms that may seek to waive its right to a jury trial; and any such term(s) requiring same, shall be deemed to be of no force or effect as against the OWNER.

25.13 Force Majeure. Neither party shall be liable for failure to perform or delay in performing any obligation under the Agreement if the failure or delay is caused by any circumstances beyond its reasonable control, including, but not limited to, acts of God, war, civil commotion or industrial dispute ("Force Majeure"). If such delay or failure continues for at least sixty (60) days, then either party may provide written notice to terminate the Agreement; and, upon such termination, the parties will owe no further obligations to the other except with respect to any rights or obligations that may have accrued prior to termination.

25.14 Severability. In the event any provision of this Agreement shall be held invalid or unenforceable for any reason, that provision shall be ineffective to the extent of such invalidity or unenforceability, and such invalidity or unenforceability shall not affect any other provision of this Agreement. If necessary, the parties shall negotiate in good faith to modify the Agreement to preserve (to the extent possible) their original intent.

25.15 Authority. The parties represent that they have full power and authority to enter into and perform this Agreement and the parties know of no Contract, agreement, promise or undertaking which would prevent the full corporate execution and performance of this

Agreement, and the persons executing this Agreement on behalf of the parties are duly authorized to do so and have the authority to bind such parties.

25.16 Entire Agreement. This Agreement constitutes the entire agreement of the Parties and supersedes all prior agreements, whether written or oral, between the Parties with respect to its subject matter (including any letter of intent, memorandum of understanding or other such non-binding document).

25.17 Arbitration. The OWNER shall not be subject to the terms of any provision any supplemental terms that may seek to require the OWNER to submit a dispute to arbitration; and, any such term(s) requiring same, shall be deemed to be of no force or effect as against the OWNER.

25.18 Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original copy of this Agreement and all of which, when taken together, will be deemed to constitute one and the same agreement. The exchange of copies of this Agreement and of signature pages by facsimile or email transmission shall constitute effective execution and delivery of this Agreement as to the parties and may be used in lieu of the original Agreement for all purposes. Signatures of the parties transmitted by facsimile shall be deemed to be their original signatures for all purposes.

Signatures on following page

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

OWNER:

CITY OF BILOXI, MISSISSIPPI

By: _____
Name: A.M. Gilich, Jr.
Title: Mayor

ATTESTED TO BY:

_____
Municipal Clerk

CONTRACTOR:

_____

By: _____
Name: _____
Title: _____

Revised: 02/08/2022

CONSTRUCTION AGREEMENT BETWEEN OWNER AND CONTRACTOR ON THE BASIS OF UNIT PRICES

THIS AGREEMENT made as of the _____ day of _____, in the year 2022, by and between the

CITY OF BILOXI, MISSISSIPPI

(hereinafter called OWNER) and

_____

(hereinafter called CONTRACTOR)

WITNESSETH THAT OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE I: WORK

1.01 The intent of the Contract is to provide for the execution, construction, and completion in every detail of the work described, and to compensate the CONTRACTOR for all acceptable work performed in accordance with the provisions of the Contract. The CONTRACTOR shall furnish all labor, materials, equipment, supplies, transportation, supervision, methods and procedures necessary to complete the work in accordance with the specifications and terms of the Contract Documents.

1.02 The CONTRACTOR shall perform all work as specified or indicated in the Contract Documents for the completion of the Project generally described as follows:

0000: _____

1.03 CONTRACTOR represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with, the nature and extent of the Contract Documents, Work locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that may in manner affect the performance of the Work, and represents that he/she has correlated his/her study and observations with the requirements of the Contract Documents.

1.04 Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. He shall at once report in writing to Engineer any conflict, error discrepancy which he may discover; however, he shall not liable to OWNER or Engineer for his failure to discover any conflict, error or discrepancy in the Drawings or Specifications.

ARTICLE II: ENGINEER

2.01 The project has been designed by _____ located at 123 Main Street, Biloxi, Mississippi 39530, who is known as the DESIGN ENGINEER throughout the specifications. The City Engineer for the City of Biloxi Engineering Division will act as ENGINEER in connection with completion of the Project in accordance with the Contract Documents. It is understood that the City Engineer may designate authority to any member of his staff, as he deems necessary.

2.02 The Engineer has the authority to make decisions on all questions that may arise as to the quality and acceptability of materials, the Work, and progress of the Work; all questions that may arise as to the interpretation of plans and specifications; and all questions as to the fulfillment of the Contract.

2.03 The Engineer has the right, but not the obligation, to suspend work wholly or in part and to withhold payments because of the CONTRACTOR'S failure to correct conditions unsafe for workmen or the general public, for failure to carry out provisions of the Contract Documents, or for failures to carry out orders. The Engineer may also suspend Work for periods deemed necessary due to unsuitable weather conditions, for any conditions considered unsuitable for the prosecution of the Work, or for any other condition or reason deemed by the Engineer to be in the public interest. The OWNER shall not be held liable for any conditions that it is not made aware of, and there is no duty on the part of the OWNER to inspect for said unsafe and/or unsuitable conditions. The duty to ensure that the conditions are safe to workmen and the public remains at all times on the CONTRACTOR, and shall not be altered by any course of conduct and/or action or inaction of the OWNER.

2.04 The Engineer will have the authority to enforce and make effective all decisions and orders relating to the Contract Documents.

ARTICLE III: CONTRACT TIME

3.01 The work herein described shall be completed within one hundred (100) Calendar days for the project after the date of the Contract Time commences, also known as the Notice to Proceed Date. This date is established by the date on the Notice to Proceed order.

3.02 The CONTRACTOR shall provide sufficient materials, equipment and labor to guarantee the completion of the project in accordance with the plans and specifications within the Contract Time.

3.03 Percent complete shall be determined by comparing the total money earned to date by the CONTRACTOR, minus any payment for advancement of materials, to the total dollar amount of the Contract. The percentage elapsed time shall be calculated as the direct ratio of the expired Calendar Days to the total Calendar Days provided for in the Contract.

3.04 When the "percent complete" lags more than twenty percent (20%) behind the "percent time lapsed," the Engineer shall notify the CONTRACTOR that they have seven (7) calendar days to submit a written statement and revised progress schedule indicating any additional equipment, labor, materials, etc. to be assigned to the work to ensure completion within the specified Contract Time. Failure to submit the revised schedule may result in withholding of the monthly estimate. When the "percent complete" lags more than forty percent (40%) behind the "percentage of elapsed time," the Contract may be terminated.

3.05 On Calendar Day Contracts, an extension of Contract Time may be granted for unforeseen utility delays, abnormal delays caused solely by the OWNER or other governmental authorities, or unforeseeable disastrous phenomena of nature of the magnitude of earthquakes, hurricanes, named tropical storms, tornadoes, or flooded essential work areas that are deemed to unavoidably prevent prosecuting the work.

3.06 The span of time allowed in the Contract as awarded is based on the quantities used for comparison of bids. If satisfactory fulfillment of the Contract requires performance of work in greater quantities than those set forth in the proposal, the time allowed for completion shall be increased by Calendar Days in the same ratio that the cost of such added work increases the total value of the original Contract. This is exclusive of the cost of work altered by an approved Change Order for which a time adjustment has already been made.

3.07 Additional Contract Time for weather days will be determined using the Keesler AFB monthly climatology report. Additional Contract Time may be approved for any days that have precipitation of 0.5 inches or greater, day for day. Weather days will not be automatically granted, in order to be considered, a request for weather days shall be included in the monthly schedule update submitted with the pay estimate. To justify days in addition to the days reported by the Keesler climatology reports, the Contractor is required to provide an updated schedule showing the impact along with a written narrative and/or pictures with the monthly schedule update.

ARTICLE IV: CONTRACT PRICE

4.01 CONTRACTOR submitted the approved bid for the performance of the work described in the Contract Documents in the total sum of:

_____ (_____)

4.02 The total sum above is based on estimated quantities for each pay item. The actual payment to the CONTRACTOR shall be subject to the actual quantity of approved work performed and the terms and conditions of this Contract. The total Contract price shall not exceed the amount of the approved bid unless otherwise approved by the OWNER.

ARTICLE V: CONTRACT DOCUMENTS

5.01 The Contract Documents, which comprise the Contract between the OWNER and CONTRACTOR, consists of the following documents, which documents are made a part of this agreement as fully as if disclosed and written at length and made a part thereof:

(a) This agreement (Pages 1 through 28, inclusive),

(b) Exhibits to this Agreement,

(c) CONTRACTOR'S Proposal and Bonds,

(d) Notice of Award,

(e) Advertisement, Section 901

(f) Testing and Submittal Requirements

(g) Notice to Bidders, Section 904,

(h) Special Provisions, Section 907,

(i) Technical Specifications, including the Mississippi Standard Specifications for Road and Bridge Construction, 2017 Edition, Excluding Division 900, if applicable,

(j) Drawings consisting of sheet 1 of _____, thru _____ of _____,

(k) Any Addenda to the Contract Documents.

(l) Any modifications, including Change Orders, duly delivered after execution of this Agreement, and

(m) Notice to Proceed.

5.02 The Contract Documents constitute the entire agreement between OWNER and CONTRACTOR and may be only altered, amended or repealed by a duly executed written instrument.

ARTICLE VI: SUBCONTRACTORS

6.01 Neither the OWNER nor CONTRACTOR shall, without the prior written consent of the other, assign or sublet in whole or in part his interest under any of the Contract Documents; and, specifically, CONTRACTOR shall not assign any moneys due or to become due without prior written consent of OWNER.

6.02 CONTRACTOR agrees to procure SUBCONTRACTORS in a fair and nondiscriminatory manner.

6.03 CONTRACTOR shall ensure that each SUBCONTRACT includes all the provisions of this Contract. CONTRACTOR is responsible for monitoring all SUBCONTRACTORS to ensure compliance with the provisions contained herein.

6.04 CONTRACTOR shall not enter into any SUBCONTRACT without the written approval of OWNER.

6.05 Subcontracting does not release CONTRACTOR of bond and Contract liability and shall not be construed to imply that a Contract exists between the OWNER and a third party.

ARTICLE VII: CONTROL OF WORK

7.01 CONTRACTOR shall supervise and direct the work efficiently and with his best skill and attention. He shall be responsible to see that the finished work complies accurately with the Contract Documents.

7.02 CONTRACTOR shall keep on the work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and Engineer except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR. The CONTRACTOR shall furnish in writing the name of his resident superintendent and telephone numbers where he may be reached in the event of emergencies.

7.03 CONTRACTOR shall keep one record copy of all Specifications, Drawings, Addenda, Modifications and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to Engineer and shall be delivered to him for OWNER upon completion of the Project.

7.04 CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work, and at the completion of the Work he shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for use. CONTRACTOR shall restore to their original condition those portions of the site not designated for alteration.

7.05 In case of the suspension of Work from any cause whatever, CONTRACTOR shall be responsible for all material, shall properly store them, if necessary, and shall provide suitable drainage of the area and erect temporary structures where necessary.

7.06 CONTRACTOR shall confine his equipment, the storage of materials and equipment and the operations of his workmen to areas permitted by law, ordinances, permits or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment. CONTRACTOR shall not enter or occupy with men, tools, or material any private ground without the consent of the owner of said private property.

ARTICLE VIII: CONTROL OF MATERIALS

8.01 CONTRACTOR shall furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliance, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of the Work.

8.02 All materials and equipment shall be new, except as otherwise provided in the Contract Documents. If required by Engineer, CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

8.03 All materials and equipment shall be applied, installed, connected, erected, raised, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors, except as otherwise provided in the Contract Documents.

8.04 For all manufactured articles, units, components, or materials incorporated in the work completed under this Contract, CONTRACTOR shall furnish the manufacturer's warranties, guarantees, instruction sheets, and technical specification sheets before final acceptance of work.

8.05 All materials not conforming to the requirements of the specifications at the time they are incorporated in the Work shall be rejected and removed immediately unless otherwise instructed by the Engineer.

8.06 In compliance with the laws of the State of Mississippi, in choosing materials for the project, the successful bidder shall be required to give preference to materials grown, produced, prepared, made or manufactured within the State of Mississippi. The foregoing notwithstanding, no preference shall be given to materials grown, produced, prepared, made or manufactured in the State of Mississippi when other materials of like quality produced outside the State of Mississippi may be purchased or secured at less cost, or any other materials of better quality produced outside the State of Mississippi can be secured at a reasonable cost.

8.07 The CONTRACTOR shall not use any materials on the project that are grown, produced, prepared, made or manufactured outside the United States.

8.08 Any materials to be used as a substitute to any material specified in the Contract shall be approved by the Engineer, or his authorized representative, prior to use. The

CONTRACTOR shall be responsible for submitting all information needed by the Engineer to show all properties, characteristics, test reports, etc. to make an informed decision as to the compliance of the proposed material with the Contract.

8.09 CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by him in accordance with the law of the place where the Work is to be performed.

8.10 CONTRACTOR warrants and guarantees that all materials and equipment will be new unless otherwise specified and that all Work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents and of any inspections, tests or approvals referred to in the Technical Specifications.

8.11 All tests, inspections and submittals shall be submitted to the OWNER in accordance with the Technical Specifications.

ARTICLE IX: PROGRESS SCHEDULE

9.01 The CONTRACTOR shall submit a progress schedule to the City Engineer or his authorized representative for his approval no later than three (3) working days after the Notice to Proceed date. The schedule will be in the form of a bar graph indicating the controlling phases of work, the bid sheet sequence numbers of all pay items in each phase, and the beginning and the ending time for each phase. At least one phase of work will be shown to begin no later than the date for beginning of Contract Time, and at least one phase of work will be shown to be in progress until all work is scheduled to be complete. The schedule shall indicate the sequence and interdependency of all Work activities.

9.02 The CONTRACTOR'S progress schedule shall reflect a realistic rate of prosecution with all work to be completed within the specified Contract Time. In preparation of his progress schedule, the CONTRACTOR shall take into consideration all controlling factors and specified limitations. The schedule shall show work broken down by street name (if applicable) and then by station number so that a logical progress of work can be followed.

9.03 An approved progress schedule shall be in effect until the date on which a revised schedule is approved. The approved progress schedule will be the basis for establishing major construction operations, Contract Time assessment, and for checking the progress of the work.

9.04 On projects with a Contract Time of more than eight (8) months, an updated progress schedule shall be delivered to the OWNER with each pay request. Failure to submit an up to date progress schedule shall stop the pay estimate process. The pay estimate will be held or returned to the CONTRACTOR until an updated schedule is submitted. Any revisions to the progress schedule shall be submitted to the OWNER for approval.

9.05 Monthly schedule updates shall include the following:

(a) Activity Status Report

(b) Proposed Revisions (or changes in construction sequence) Report

(c) Narrative Report containing the following information:

(i) Description of overall Project status

(ii) Description of problem areas

(iii) Current and anticipated delays to include the cause of delay; corrective action and adjustments of schedule to correct the delay; and any known or potential impact of the delay on other activities or milestones

(iv) Pending items and status thereof, including but not limited to:

1) Pending Change Orders that include time extensions

2) Other Issues relating to Contract Time (weather, material delivery, etc.)

(v) Contract Completion Date Status:

1) If ahead of schedule, note the number of calendar days ahead

2) If behind schedule, note the number of calendar days behind

(vi) Any Other Project or Schedule Issues/Concerns

9.06 Whenever it becomes apparent from the current monthly updated Schedule that the Contract completion date will not be met, the CONTRACTOR agrees that they will take some or all of the following actions. However, these actions must first be reviewed and approved by the OWNER. These actions will be taken by the CONTRACTOR at NO additional cost to the OWNER.

(a) Increase construction manpower to eliminate the backlog of work.

(b) Increase the number of hours worked per day and/or shift, increase the number of days worked per week, etc. However, this shall not be construed as permitting the CONTRACTOR to violate the OWNER'S work hour restrictions per Ordinance.

(c) Reschedule activities to expedite the work and eliminate the backlog of work.

9.07 Any requests for an adjustment in Contract Time shall be submitted by the CONTRACTOR in writing and shall include a Time Impact Analysis. Each Time Impact Analysis shall provide information justifying the request and stating the extent of the

adjustment requested for each specific change or alleged delay. This analysis shall be done at no additional cost to the OWNER.

ARTICLE X: CHANGES TO WORK

10.01 OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, CONTRACTOR shall proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price, or an extension or shortening of the Contract Time, an equitable adjustment will be made. Change Orders may not alter unit prices established under the Contract Documents.

10.02 Engineer may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. If CONTRACTOR believes that any minor change or alteration authorized by Engineer entitles him to an increase in the Contract Price, CONTRACTOR may make a claim as provided by law.

10.03 Additional Work performed by CONTRACTOR without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time.

10.04 CONTRACTOR will provide immediate notification to the Engineer upon discovering a condition that may require a change to the Contract Documents. The notification will include (1) a description of the condition, including the time and date it was identified; (2) an explanation of why the condition represents a change to the Contract Documents; and (3) a statement of all changes considered necessary to the Contract Price and Contract Time.

ARTICLE XI: ACCEPTANCE OF WORK

11.01 OWNER will monitor the performance of CONTRACTOR against goals and performance standards required herein. Substandard performance as determined by OWNER will constitute non-compliance with this agreement. If action to correct such substandard performance is not taken by CONTRACTOR within a reasonable period of time as determined by the OWNER after being notified by OWNER, Contract suspension or termination procedures will be initiated.

11.02 All materials and parts or detail of the work are subject to inspection by the Engineer. The Engineer shall be allowed access to all of the Work and shall be furnished with such information and assistance by the CONTRACTOR as necessary to make a complete and detailed inspection.

11.03 Unacceptable work, whether the result of poor workmanship, defective materials, damage through carelessness or any other cause, found prior to final acceptance of work shall be removed and replaced in an acceptable manner at no additional cost to the OWNER.

11.04 Engineer will have authority to disapprove or reject Work which is "defective," which term is hereinafter used to describe Work that is unsatisfactory, faulty, or defective, or does not conform to the requirements of the Contract Documents, or does not meet the requirements of any inspection, test or approval, or has been damaged prior to approval of final payment. Engineer will also have authority to require a special inspection or testing of the Work, whether or not the Work is fabricated, installed or completed.

11.05 Until the acceptance of the work by Engineer, as evidenced in writing, it shall be under the charge and care of CONTRACTOR. He shall take every necessary precaution against damages to any party thereof by the action of the elements or from any other cause whether arising from the execution or from the non-execution of the work. Before final acceptance, CONTRACTOR shall at his expense rebuild, restore, repair and make good at his own expense all injuries or damages to any portion of the Work occasioned by any of the above causes.

ARTICLE XII: LIQUIDATED DAMAGES

12.01 If the CONTRACTOR fails to complete the Work within the Contract Time and all approved Change Orders, a deduction calculated from the daily charges listed in the below schedule will be made from money due to the CONTRACTOR, not as penalty but as liquidated damages. The daily charges set out in the schedule of liquidated damages are based on an approximated average cost to the OWNER for maintaining engineers, inspectors and other employees. The CONTRACTOR and the CONTRACTOR'S Sureties shall be liable for all liquidated damages in excess of money due the CONTRACTOR.

Original Contract Amount		
From More Than	**To and Including**	**Daily Charge Per Calendar Day**
$ 0.00	$100,000.00	$150.00
$100,000.00	$500,000.00	$360.00
$500,000.00	$1,000,000.00	$540.00
$1,000,000.00	$5,000,000.00	$830.00
$5,000,000.00	$10,000,000.00	$1,200.00

$10,000,000.00	$20,000,000.00	$1,800.00
$20,000,000.00	----------	$3,500.00

ARTICLE XIII: PERMITS

13.01 CONTRACTOR is responsible for any permits, and is required to comply with all codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.

ARTICLE XIV: BONDS

14.01 Within ten (10) days of receiving the Notice of Award, the CONTRACTOR shall execute and deliver to the OWNER a performance bond or bonds in a sum equal to the full Contract Price. The form of the bond(s) shall be that provided by the OWNER. The bond shall be negotiated for, procured from and the premium paid to a qualified surety agent as listed below. The bonds may be made by any surety company which is authorized to do business in the State of Mississippi and listed on the United States Treasury Department's list of acceptable sureties, or such bonds may be guaranteed by a personal surety as otherwise provided for in the Mississippi Code of 1972 as referenced below. The bond shall be signed or countersigned by a qualified surety agent and also bear the signature of an "attorney-in-fact" of the surety. (Reference is made to Section 31-5-51 et seq. of the Mississippi Code of 1972, Annotated, and other State statutes applicable thereto).

14.02 Except as otherwise provided herein, for a personal surety, no surety or surety company shall be allowed to guarantee or write bonds or construction, alteration or repair of a public building or for public work, unless that surety is listed on the United States Treasury Department's list of acceptable sureties.

14.03 If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located, or is revoked, CONTRACTOR shall within five (5) days thereafter substitute another Bond and Surety, both of which shall be acceptable to OWNER.

14.04 Failure of the CONTRACTOR to provide an acceptable bond and all fully executed Contract Documents, within twenty (20) days of the mailing of the Notice of Award shall be just cause for the cancellation of the Contract. In the event the Contract is cancelled due to the failure of the CONTRACTOR to timely provide the bond and all fully executed Contract Documents, the CONTRACTOR'S proposal guaranty shall be forfeited. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised at the discretion of the OWNER.

14.05 It is CONTRACTOR'S responsibility to notify his Surety of any changes affecting the general scope of the Work. CONTRACTOR shall furnish proof of such adjustment to OWNER.

ARTICLE XV: LEGAL RELATIONS

15.01 CONTRACTOR represents that he has made himself familiar with all state laws and local ordinances and regulations which in any manner affect those engaged or employed in the Work or the material or equipment used in the proposed construction or which in any way affect the conduct of the work and no plea of misunderstanding will be considered on account of ignorance thereof.

15.02 The CONTRACTOR shall procure all permits, and licenses, pay all charges, fees and taxes and issue all notices necessary and incidental to the due and lawful prosecution of the work.

15.03 CONTRACTOR agrees to comply with the Title VI of the Civil Rights Act of 1964 as amended, Title VIII of the Civil Rights Act of 1968 as amended, Section 109 of Title I of the Housing and Community Development Act of 1974, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Executive Order 11063, and with Executive Order 11246 as amended by Executive Orders 11375 and 12086.

15.04 CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, creed, religion, ancestry, national origin, sex, disability or other handicap, age, marital status, or status with regard to public assistance. CONTRACTOR will take affirmative action to ensure that all employment practices are free from such discrimination. Such employment practices include but are not limited to the following: hiring, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting agency setting forth the provisions of this nondiscrimination clause.

15.05 CONTRACTOR agrees to comply with the requirements of the Secretary of Labor in accordance with the Davis-Bacon Act as amended, the provisions of Contract Work Hours, the Hatch Act, the Safety Standards Act, the Copeland "Anti-Kickback" Act (40 U.S. C. 276, 327-333) and all other applicable federal, state and local laws and regulations pertaining to labor standards insofar as those acts apply to the performance of this Contract. CONTRACTOR shall maintain documentation, which demonstrates compliance with hour and wage requirements of this part. Such documentation shall be made available to OWNER for review upon request.

15.06 Where employees are engaged in activities not covered under the Occupational Safety and Health Act of 1970, they shall not be required or permitted to work, be trained, or receive

services in buildings or surroundings or under working conditions, which are unsanitary, hazardous or dangerous to the participants' health or safety.

15.07 Participants employed or trained for inherently dangerous occupations, shall be assigned to work in accordance with reasonable safety practices.

15.08 CONTRACTOR agrees to comply with the following regulations insofar as they apply to the performance of this Contract (applies to Contracts or subContracts in excess of $100,000):

(a) Clean Air Act, 42 U.S.C., 1857, et seq. (Amended to 42 U.S.C., 7602, et. seq.)

(b) Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251, et seq., as amended 1368 relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.

(c) Environmental Protection Agency (EPA) regulations pursuant to 40 C.F.R., Part 15, as amended.

ARTICLE XVI: PUBLIC CONVENIENCE AND SAFETY

16.01 The CONTRACTOR shall provide and maintain adequate sanitation facilities for the use of his employees. The location of such accommodations shall be subject to the prior approval of the Engineer.

16.02 The CONTRACTOR shall be responsible for the preservation of public and private property. The CONTRACTOR shall be responsible for all damage or injury to public or private property resulting from any act, omission, neglect, misconduct, inefficiency, method of executing the work, or non-execution thereof or due to defective work or materials.

16.03 CONTRACTOR shall restore each job site at his own expense to a condition equal to that existing before the damage or injury. In the case of failure on the part of the CONTRACTOR to restore or make good such damage or injury, the Engineer may, upon forty-eight (48) hours written notice, proceed to repair, rebuild or otherwise restore such property and the cost thereof shall be deducted from monies due to which may become due the CONTRACTOR. In the event no monies are available, the amount shall be charged against the CONTRACTOR'S Surety.

16.04 CONTRACTOR shall require all workers to wear long pants, shirt, and shoes or boots at all times on the job site.

16.05 In the event of an approaching tropical storm, hurricane, etc., the CONTRACTOR shall, at the direction of the Engineer or his authorized representative, prepare the job site by securing any and all materials, equipment, etc. This includes anchoring any job trailer if it is to stay on

the site during the storm. The CONTRACTOR shall assure the Engineer that the building is secure and watertight. The CONTRACTOR shall absorb all associated costs.

ARTICLE XVII: PROGRESS AND FINAL PAYMENTS

17.01 The compensation, as herein provided, constitutes full payment for the complete Work including all materials, labor, tools, equipment and incidentals necessary for performing the Work under this Contract.

17.02 CONTRACTOR shall submit pay requests in accordance with the section entitled "City of Biloxi Testing and Submittal Requirements" of the specification. All applications for payment shall be certified by the CONTRACTOR that to the best of CONTRACTOR'S knowledge, information and belief, the Work covered by the application for payment has been completed in accordance with the Contractor Documents, that all amounts have been paid by the CONTRACTOR for Work for which previous Certificates for Payment were issued and payments received for the OWNER, and that that the current payment shown in the pay application is now due. In addition, all applications for payment shall include certification to the project engineer or architect indicating payments to subcontractors on prior payment request, as required by Miss. Code of 1972, §31-5-25.

17.03 OWNER shall make progress payments on the basis of CONTRACTOR'S application for payment as approved by the ENGINEER during the course of this agreement. All progress payments will be on the basis of the approved progress of the work completed and stored to date measured by the schedule of values.

17.04 All partial, progress or interim payments or monies owed to CONTRACTOR shall be paid when due and payable under the terms of the Contract. If they are not paid within forty-five (45) calendar days from the date approved by the OWNER, then they shall bear interest in accordance with §31-5-24 of the Mississippi Code of 1972, Annotated.

17.05 The Engineer may refuse to approve the whole or any part of any payment if, in his opinion, he is unable to make such representations to the OWNER. Engineer may also refuse to approve any such payment, or because of subsequently discovered evidence or the result of subsequent inspection or tests, nullify any such payment, or any part of any payment, previously approved to such extent as may be necessary in his opinion to protect the OWNER from loss because:

(a) Completed Work or existing property has been damaged by the CONTRACTOR or his Subcontractors, requiring replacement or repair;

(b) The Work for which payment is requested cannot be verified or was not verified by the OWNER at the time of payment, but subsequent verifications revealed discrepancies;

(c) The Engineer or his authorized representative verifies the Work and the OWNER pays for the Work, but subsequent discoveries reveal discrepancies between the Contract and the payment;

(d) Claims or Liens have been filed, or there is reasonable evidence indicating the probable filing thereof;

(e) The Task price has been reduced because of Modifications;

(f) The OWNER has been required to correct defective Work, complete the Work, or maintain traffic control due to unsafe conditions;

(g) Of unsatisfactory prosecution of the Work, including failure to clean up the job site;

(h) Of persistent failure to carry out the Work in accordance with the Contract Documents;

(i) Of liquidated damages payable by the CONTRACTOR; or

(j) Of any other violation thereof, or failure to comply with, the provisions of the Contract Documents.

17.06 If, on the basis of Engineer's observation and review of the Work during construction, his inspection and his review of the Application for Payment, Engineer is satisfied that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract and has made all corrections to remedy deficiencies in the Work, then the Engineer shall approve payment. Otherwise, he will return the application to CONTRACTOR, indicating in writing his reasons for refusing to approve payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

ARTICLE XVIII: RETAINAGE

18.01 Prior to fifty percent (50%) completion, progress payments will be in an amount equal to ninety-five percent (95%) of the work completed, and ninety-five percent (95%) of material and equipment not incorporated in the work but delivered and suitably stored, less than each case the aggregate of payments previously made.

18.02 Once fifty percent (50%) project completion has been obtained, but prior to final completion, progress payments will be in an amount equal to ninety-seven and one-half percent (97.5%) of the work completed, and ninety-seven and one-half percent (97.5%) of material and equipment not incorporated in the work but delivered and suitably stored, less than each case the aggregate of payments previously made; provided that the project is on schedule and all work is satisfactory in the opinion of the City Engineer. At fifty percent (50%) project completion, as described above, fifty percent (50%) of the retainage held to date shall be returned.

18.03 Upon final completion of the work and settlement of all claims, OWNER shall pay the remainder of all completed work plus any and all retainage provided the CONTRACTOR has submitted the Record Drawings.

18.04 When the Work is finally completed, the total cost to the OWNER will be computed. If the total cost is greater than the cost which would have resulted under the unit prices established under the Contract, the extra expense will be the responsibility of the original CONTRACTOR'S Surety. If the total cost is less than the cost which would have resulted under the unit prices established under the Contract, the savings will be paid to the original CONTRACTOR'S Surety.

ARTICLE XIX: FINAL ACCEPTANCE & WARRANTIES

19.01 Upon written notice from the CONTRACTOR of substantial completion of all the major items of work or upon due notice from the Engineer a final inspection will be made by the City Engineer or his authorized representative. If all work provided by the Contract has been completed to his satisfaction, that inspection will constitute the final inspection. If the inspection discloses any work as being unsatisfactory or incomplete, the City Engineer or his authorized representative will discuss in detail with the CONTRACTOR all discrepancies in the work. Upon correction of the work, another inspection will be made which shall constitute the final inspection provided the work has been satisfactorily completed.

19.02 Prior to final payment being made, the CONTRACTOR will be required to submit to the City Engineer or his authorized representative, a maintenance guarantee to ensure against defects in workmanship or materials for a time period of two years from the date of final payment with the City of Biloxi named as the sole beneficiary. The guarantee shall be in any of the following acceptable forms:

(a) Certified check from a Mississippi lender based upon a cash deposit, in a form acceptable to the City Attorney;

(b) Irrevocable letter of credit from a Mississippi banking institution in a form acceptable to the City Attorney; or

(c) Surety bond from a Mississippi surety bonding company in a form acceptable to the City Attorney.

19.03 CONTRACTOR shall guarantee all work under Contract for a period of two (2) years after the date of final payment by the OWNER for this project (the "Warranty Period").

19.04 If, prior to the expiration of the Warranty Period, or such a longer period of time as may be prescribed by law, any work is found to be defective, CONTRACTOR shall promptly without cost to the OWNER and in accordance with OWNER'S written instructions, either correct such defective work, or, if it has been rejected by the OWNER, remove it from the

site and replace it with corrected work. If the CONTRACTOR does not promptly comply with the terms of such instructions, the OWNER may have the defective work corrected or the rejected work removed and replaced and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid for by funds generated through the maintenance guarantee shall be conditioned on the performance of all work necessary to warranty required public infrastructure improvements during the term of the maintenance guarantee, including work needed to repair or replace defects in workmanship or defective materials. Maintenance guarantees shall provide that in case of the CONTRACTOR'S failure to repair or replace the guaranteed work during the term on the maintenance guarantee, the OWNER shall be able to immediately obtain the funds necessary to make such repairs or replacements, including but not limited to costs associated with labor, equipment and materials.

19.05 Maintenance guarantee shall be dependent on the total value of the Contract a minimum amount as shown in the table below:

Amount of Construction Contract	**Required Bond Value**
$0 - $2,500,000	$250,000
$2,500,000 - $5,000,000	$500,000
$5,000,000 - $10,000,000	$750,000
$10,000,000 - $25,000,000	$1,000,000
$25,000,000 - $50,000,000	$1,500,000
$50,000,000 - $75,000,000	$2,000,000
$75,000,000 - $100,000,000	$2,500,000
$100,000,000 - >$150,000,000	$3,000,000

19.06 The City Engineer shall release the maintenance guarantee at the end of the term of the guarantee only after an inspection of the work has been performed and work performed under the Contract is shown to be in proper working order.

19.07 In the event a bond is used as the guarantee, the form of the bond shall be that acceptable to the OWNER. The bond shall be negotiated for, procured from and the premium paid to a qualified surety agent as listed below. The bonds may be made by any surety company which is authorized to do business in the State of Mississippi and listed on the United States Treasury Department's list of acceptable sureties, or such bonds may be guaranteed by a personal surety as otherwise provided for in the Mississippi Code of 1972 as referenced below. The bond shall be signed or countersigned by a qualified surety agent and also bear the signature of an "attorney-in-fact" of the surety. (Reference is made to Section 31-5-51 et seq of the Mississippi Code of 1972, Annotated, and other State statutes applicable thereto).

19.08 Except as otherwise provided herein, for a personal surety, no surety or surety company shall be allowed to guarantee or write bonds for construction, alteration or repair of a public building or for public work, unless that surety is listed on the United States Treasury

Department's list of acceptable sureties.

19.09 When the Work is finally completed, the total cost to the OWNER will be computed. If the total cost is greater than the cost which would have resulted under the unit prices established under the Contract, the extra expense will be the responsibility of the original CONTRACTOR'S Surety. If the total cost is less than the cost which would have resulted under the unit prices established under the Contract, the savings will be paid to the original CONTRACTOR'S Surety.

19.10 The final payment will not be issued until after the final as-built drawings have been submitted, reviewed for accuracy and accepted. Final as-built drawings must be provided in both digital and hard copies. Digital files shall consist of a complete .PDF of the as-built drawings as well as the CADD files (.dgn, .dwg or .dxf format; Microstation or AutoCAD, latest versions acceptable to the OWNER). One (1) full-size hard copy shall also be provided. A digital copy of the original design drawings is available upon request.

19.11 As-built drawings in digital format shall have all field changes incorporated into the original Contract drawings. Hard copies of as-built drawings shall show the redlined field changes on the original Contract drawings. Redlines on hard copies shall stand out by color.

ARTICLE XX: RECORDS

20.01 All CONTRACTOR records with respect to any matters covered by this agreement shall be made available to OWNER, grantor agency, the Comptroller General of the United States, their designees or the Federal Government, at any time during normal business hours, as often as OWNER or grantor agency deems necessary, to audit, examine, and make excerpts or transcripts of all relevant data. Any deficiencies noted in audit reports must be fully cleared by CONTRACTOR within thirty (30) days after receipt by CONTRACTOR. Failure of CONTRACTOR to comply with the above audit requirements will constitute a violation of this Contract and may result in the withholding of future payments.

20.02 CONTRACTOR shall retain all records pertinent to expenditures incurred under this Contract for a period of three (3) years after the termination of all activities funded under this agreement, or after the resolution of all Federal Audit Findings, whichever occurs later.

20.03 CONTRACTOR shall retain all records pertinent to subcontracts incurred under this Contract for a period of three (3) years after the termination of all activities funded under this agreement, or after the resolution of all Federal audit findings, whichever occurs later. Records for non-expendable property acquired with funds under this Contract shall be retained for three (3) years after final disposition of such property.

ARTICLE XXI: INSURANCE REQUIREMENTS

21.01 CONTRACTOR shall carry:

(a) Commercial general liability insurance coverage (including subcontractors) with limits not less than $1,000,000 each occurrence; $2,000,000 aggregate (aggregate applies to all work under this Contract); automobile liability - $1,000,000 combined single limit-each accident;

(b) Workers' Compensation and Employers' Liability with a waiver subrogation in favor of the City of Biloxi - Statutory & $100,000 each accident; $100,000 each employee; $500,000 policy limit.

21.02 Each policy shall be signed or countersigned by a Mississippi Resident Agent of the insurance company.

21.03 CONTRACTOR further indemnifies and saves the OWNER harmless from and against any loss, damage and liabilities occasioned by, growing out of, or resulting from any default hereunder, relating to the execution of this agreement.

21.04 The CONTRACTOR shall name the City of Biloxi as an additional insured on the Certificate of Insurance furnished to the OWNER from the Insurance Company providing the required coverage. The certificate(s) shall be on the form furnished by the OWNER and will show the types and limits of coverage.

21.05 The CONTRACTOR shall purchase and maintain, in a company or companies lawfully authorized to do business in the State of Mississippi, property insurance written on a builder's risk "all-risk" policy in the amount of the Contract Price plus value of subsequent Change Orders, comprising total value for the entire Project at the site on a replacement cost basis. Such property insurance shall be maintained until the date of final payment. This insurance shall include coverage of the City of Biloxi, the CONTRACTOR, and Subcontractors in the Project. The form of policy for this coverage shall be Completed Value. If the CONTRACTOR fails to maintain such insurance, then the CONTRACTOR shall bear all repair costs to the project.

21.06 When any portion of the work to be completed under this Contract shall be performed on the navigable waters of the United States or in adjoining waterfront areas, CONTRACTOR shall provide evidence of coverage for The United States Longshore and Harbor Workers' Compensation Act with an insurance company rated by A.M. Best Company not less than A-X that is licensed and admitted to operate in the State of Mississippi.

21.07 Providing the types of insurance coverage to be described herein does not reduce nor relieve CONTRACTOR from his responsibility for any losses not covered by insurance.

ARTICLE XXII: TERMINATION OF CONTRACT

22.01 OWNER may terminate this Contract at any time by giving written notice to CONTRACTOR of such termination and specifying the effective date thereof. Partial terminations of the Specifications or Proposal Document may only be undertaken with the prior approval of OWNER. In the event of any termination for convenience, all finished or unfinished documents, data, studies, surveys, maps, models, photographs, reports or other materials prepared by CONTRACTOR under this agreement shall, at the option of OWNER, become the property of OWNER, and CONTRACTOR shall be entitled to receive just and equitable compensation for any satisfactory work completed (by unit price) on such documents or materials prior to the termination. Upon termination for convenience, the payment made to CONTRACTOR will be based upon approved units completed. OWNER may also suspend or terminate this Agreement, in whole or in part, if CONTRACTOR materially fails to comply with any term of this Agreement, or with any of the rules, regulations or provisions referred to herein; and OWNER may declare CONTRACTOR ineligible for any further participation in OWNER Contracts, in addition to other remedies as provided by law. In the event there is probable cause to believe CONTRACTOR is in noncompliance with any applicable rules or regulations, OWNER may withhold up to fifteen (15) percent of said Contract funds until such time as CONTRACTOR is found to be in compliance by OWNER, or is otherwise adjudicated to be in compliance.

22.02 The Contract may be terminated for default by the OWNER for any of the following reasons:

(a) Failure to proceed with the Work when so instructed by the OWNER or to adhere to the requirements of the Contract.

(b) Failure to perform the Work with sufficient workmen, equipment and materials to assure completion within Contract Time.

(c) Performing unacceptable Work, or neglecting or refusing to remove materials or to perform anew such Work as may be rejected as unacceptable.

(d) Discontinuing the prosecution of Work.

(e) Violation of labor provisions and special regulations.

(f) Becoming insolvent, being declared bankrupt or committing any act of bankruptcy or insolvency.

(g) Allowing a final judgment to stand unsatisfied.

(h) Failure for any other cause whatsoever to carry on work in an acceptable manner.

22.03 Before the Contract is terminated, the CONTRACTOR and the Surety will be notified in writing by the OWNER of the conditions which make termination of the Contract imminent. If no effective effort has been made by the CONTRACTOR or his Surety to correct the conditions of which complaint is made within fifteen (15) calendar days after notice is given, the OWNER may declare the Contract terminated and notify the CONTRACTOR and his Surety accordingly.

22.04 Upon receipt of notice from the OWNER that the Contract has been terminated the CONTRACTOR shall immediately discontinue all Work under the Contract.

22.05 After termination the OWNER will order the Surety to arrange for the prosecution of the Work. If the Surety does not proceed with the satisfactory prosecution of the work within twenty (20) calendar days from the date on which the Contract was terminated, the OWNER may proceed in any other lawful manner which will provide for the completion of the Work as planned. The Surety or the OWNER, at the Surety's expense will perform or arrange for necessary maintenance between the date of termination and the date that Work is resumed.

ARTICLE XXIII: INDEMNIFICATION

23.01 CONTRACTOR will indemnify and hold harmless OWNER, Engineer and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting there from omission of CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

23.02 In any and all claims against OWNER and Engineer or any of their agents or employees by any employee of CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 23.01 above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

23.03 CONTRACTOR shall, at its sole cost, defend all suits brought upon by such losses, and pay all costs and expenses incidental thereto, but the OWNER, or any of Indemnified Parties, so sued shall have the right at its/their option, to participate in the defense of any such suit, without relieving CONTRACTOR of any obligations hereunder.

23.04 CONTRACTOR'S obligations to indemnify under this Agreement shall survive termination or expiration of this Agreement.

ARTICLE XXIV: DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

(a) Agreement - The written agreement between Owner and Contractor covering the Work to be performed; other Contract Documents are attached to the Agreement.

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

(c) Bidder - Any person, firm or corporation submitting a Bid for the Work.

(d) Bonds - Bid, performance and payment bonds and other Instruments of security, furnished by Contractor and his surety in accordance with the Contract Documents.

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

(f) Contract Documents - The Agreement, Addenda (whether issued prior to the opening of Bids or the execution of the agreement), Instructions to Bidders, Contractor's Bid, the Bonds, the Notice of Award, these General Conditions, the Supplementary Conditions, the Specifications, Drawings, Modifications, Notices to Proceed and Purchase Orders.

(g) Contract Price – The price provided for in the Contract for a specifically described unit of work.

(h) Contract Time – The period of time beginning upon execution of the Agreement between Owner and Contractor and continuing through until termination of the Agreement, including any option to extend the time.

(i) Contractor - The person, firm or corporation with whom Owner has executed the Agreement.

(j) Day – A calendar day is defined as any day shown in the calendar beginning and ending at midnight.

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

(l) Engineer - The person, firm or corporation named as such in the Agreement or the City Engineer for Biloxi, Mississippi.

(m) Modification - (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order, (c) a written clarification or interpretation issued by Engineer, or (d) a written order for a minor change or alteration in the Work issued by Engineer. A Modification may only be issued after execution of the Agreement.

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

(o) Notice to Proceed - A written notice given by Owner to Contractor fixing the date on which the Contract Time will commence to run and on which Contractor shall start to perform his obligations under the Contract Documents on a specific segment of Work.

(p) Owner - A public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed.

(q) Project - The entire construction to be performed as provided in the Contract Documents.

(r) Resident Project Representative - The authorized representative of Engineer who is assigned to the Project site or any part thereof.

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

(t) Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work.

(u) 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.

(v) Substantial Completion - The date as certified by Engineer when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it was intended; or if there be no such certifications, the date when final payment is due.

(w) Warranty Period – the period of time beginning on the date of OWNER's final payment to CONTRACTOR for this Project and extending for two (2) years from that date, during which CONTRACTOR shall guarantee all work under this Contract.

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

ARTICLE XXV: MISCELLANEOUS

25.01 Remedies upon Default. Termination by either party of this Agreement shall not limit or otherwise effect the remedies of the non-defaulting or non-breaching party against the defaulting or breaching party. In the event that either party is in material default under any of the terms or conditions of this Agreement or has materially breached any of its representations of warranties in this Agreement, the non-defaulting or non-breaching party shall be entitled to pursue, in addition to any remedies specifically provided herein, all further remedies then available at law or in equity.

25.02 Successors and Assigns. The OWNER and CONTRACTOR each bind itself and its partners, successors, executors, administrators, and assigns to the other party of this Agreement and to the partners, successors, executors, administrators, and assigns, or such party, in respect to all covenants of this Agreement. Nothing expressed or referred to in this Agreement shall be construed as creating any personal liability on the part of any officer or agent of any public body, which may be a party hereto, nor shall it be construed as giving any rights, legal or equitable, benefits, remedies, or claims under or with respect to this Agreement or any provision of this Agreement, to anyone other than the OWNER and CONTRACTOR.

25.03 Relationship of the Parties. CONTRACTOR'S relationship with the OWNER is that of an independent Contractor, and nothing in this Agreement is intended to, or shall be construed as creating a partnership, agency, joint venture, employment or similar relationship.

(a) CONTRACTOR acknowledges that it and all its officers, employees, and agents is/are not an employee or agent of the OWNER for any purpose whatsoever. CONTRACTOR shall be responsible for all applicable I-9 and work eligibility verification, earnings reports and tax payments to government agencies, such as the U.S. Internal Revenue Service and the Social Security Administration including payment of all wages due its employees, insurance premiums, license fees, fingerprinting costs, outfitting expenses, and all other obligations and/or expenses of CONTRACTOR relative to its employees in performance of the duties under this Agreement.

(b) CONTRACTOR acknowledges that its personnel are not entitled to receive any of the fringe benefits received by the OWNER's employees, including but not limited to, Workers' Compensation Insurance.

(c) CONTRACTOR shall not have the authority to enter into any Contract on the OWNER's behalf, or to otherwise bind the OWNER to any agreement, unless expressly authorized to so do in writing.

(d) Because CONTRACTOR is an independent Contractor, the OWNER has no direction or control over Services to be performed hereunder, nor over CONTRACTOR'S personnel, and CONTRACTOR shall at all times remain the employer of its personnel performing the Services (and shall be liable for each of their actions, omissions or breaches). CONTRACTOR shall indemnify the OWNER from any claim made by any of CONTRACTOR'S personnel against the OWNER alleging rights or benefits as an employee of the OWNER.

25.04 Copyrights & Patents. If this Contract results in any copyrightable or patentable material, OWNER and/or grantor agency reserves the right to royalty-free, non-exclusive and irrevocable license to reproduce, publish or otherwise use and to authorize others to use, the work for government purposes.

25.05 Non-Discrimination. All persons having a Contract with the City of Biloxi must adhere to the OWNER's policy concerning non-discrimination on the basis of race, color, religion, sex, age, sexual orientation, gender identity, national origin, veteran or disability status.

25.06 Notices. All notices, consents, waivers and other communications required or permitted by this Agreement shall be in writing and shall be deemed given to a party when (a) delivered to the appropriate address by hand or by nationally recognized overnight courier service (costs prepaid); or (b) received or rejected by the addressee, if sent by certified mail, return receipt requested, addressed and marked to the attention of the person (by name or title) designated below (or to such other address or person as a party may designate by notice to the other parties)

OWNER:
The City of Biloxi, Mississippi:
Attention: Mayor A. M. Gilich, Jr.
140 Lameuse Street
Biloxi, Mississippi 39530

With mandatory copies to:

City of Biloxi, Mississippi
City Attorney / Contract Manager
Post Office Box 429
Biloxi, Mississippi 39533

CONTRACTOR:
_____

Attention: John Doe

_____

25.07 Governing Law and Jurisdiction.

(a) Governing Law. The laws of the state of Mississippi shall govern the application and interpretation of this Agreement.

(b) Jurisdiction. The courts located in Harrison County, Mississippi, Second Judicial District, shall have exclusive jurisdiction of any dispute between the parties. If one party initiates an action against the other or should a party seek any form of relief against the other, then said action shall be filed in Harrison County, Mississippi, Second Judicial District. Any business or person doing business with the OWNER submits to the personal jurisdiction of the courts in Harrison County, Mississippi.

25.08 Amendments. This Agreement may not be altered or amended, nor may rights hereunder be waived, except by writing executed by both parties.

25.09 Assignability. CONTRACTOR may not assign any of its rights or delegate any of its obligations under this Agreement without the prior express written consent of the OWNER. Subject to the preceding sentence, this Agreement will apply to, be binding in all respects upon and inure to the benefit of the successors and permitted assigns of the CONTRACTOR.

25.10 No Waiver of Warranties. Notwithstanding any provisions to the contrary that may be found in this Agreement or any other supplemental terms that may be referenced therein, any provision that seeks to limit the OWNER's recovery resulting from a breach of express or implied warranties shall be of no force or effect.

25.11 No Waiver of Damages. Notwithstanding any provisions to the contrary that may be found in the Agreement, or any other supplemental terms that may be referenced therein, any provision that seeks to limit the OWNER's recovery in any manner shall be of no force or effect.

25.12 Waiver of Jury Trial. The OWNER shall not be subject to the terms of any provision or any supplemental terms that may seek to waive its right to a jury trial; and any such term(s) requiring same, shall be deemed to be of no force or effect as against the OWNER.

25.13 Force Majeure. Neither party shall be liable for failure to perform or delay in performing any obligation under the Agreement if the failure or delay is caused by any circumstances beyond its reasonable control, including, but not limited to, acts of God, war, civil commotion or industrial dispute ("Force Majeure"). If such delay or failure continues for at least sixty (60) days, then either party may provide written notice to terminate the Agreement; and, upon such termination, the parties will owe no further obligations to the

other except with respect to any rights or obligations that may have accrued prior to termination.

25.14 Severability. In the event any provision of this Agreement shall be held invalid or unenforceable for any reason, that provision shall be ineffective to the extent of such invalidity or unenforceability, and such invalidity or unenforceability shall not affect any other provision of this Agreement. If necessary, the parties shall negotiate in good faith to modify the Agreement to preserve (to the extent possible) their original intent.

25.15 Authority. The parties represent that they have full power and authority to enter into and perform this Agreement and the parties know of no Contract, agreement, promise or undertaking which would prevent the full corporate execution and performance of this Agreement, and the persons executing this Agreement on behalf of the parties are duly authorized to do so and have the authority to bind such parties.

25.16 Entire Agreement. This Agreement constitutes the entire agreement of the Parties and supersedes all prior agreements, whether written or oral, between the Parties with respect to its subject matter (including any letter of intent, memorandum of understanding or other such non-binding document).

25.17 Arbitration. The OWNER shall not be subject to the terms of any provision any supplemental terms that may seek to require the OWNER to submit a dispute to arbitration; and, any such term(s) requiring same, shall be deemed to be of no force or effect as against the OWNER.

25.18 Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original copy of this Agreement and all of which, when taken together, will be deemed to constitute one and the same agreement. The exchange of copies of this Agreement and of signature pages by facsimile or email transmission shall constitute effective execution and delivery of this Agreement as to the parties and may be used in lieu of the original Agreement for all purposes. Signatures of the parties transmitted by facsimile shall be deemed to be their original signatures for all purposes.

Signatures on following page

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

OWNER:

CITY OF BILOXI, MISSISSIPPI

By: _____
Name: A.M. Gilich, Jr.
Title: Mayor

ATTESTED TO BY:

_____
Municipal Clerk

CONTRACTOR:

_____

By: _____
Name: _____
Title: _____

Revised: 04/08/2020

SECTION 903
PAYMENT AND PERFORMANCE BOND

CONTRACT BOND FOR:

(PROJECT NAME)
(PROJECT NUMBER)

LOCATED IN THE CITY OF BILOXI
HARRISON COUNTY, MISSISSIPPI

Known all men by these presents: that we, _____Principal, a residing at _____ in the State of Mississippi, authorized to do business in the State of Mississippi, under the laws thereof, and _____ as Surety, are held and firmly bound unto the City of Biloxi, Mississippi, in the Penal sum of

_____ ($_____) Dollars, lawful money of the United States of America, to be paid to it for which payment well and truly to be made, we bind ourselves, our heirs, administrators, successors, or assigns jointly and severally by these presents.

Signed and sealed this the _____ day of _____A.D., 20___.

The conditions of this bond are such, that whereas the said _____

_____ principal, has (have) entered into a contract with the City of Biloxi,

Mississippi bearing the date of _____ day of _____, 20____, hereto annexed, for the construction of certain projects in the City of Biloxi, Mississippi as mentioned in said contract in accordance with the plans, specifications and special provisions therefore, on file in the office of the City Engineer, Biloxi, Mississippi.

Now therefore, if the above bounden _____ in all things shall stand to and abide by and well and truly observe, do keep and perform all and singular the terms, covenants, conditions, guarantees and agreements in said contract, contained on his (their) part to be observed, done, kept and performed and each of them, at the time and in the manner and form and furnish all of the material and equipment specified in said contract in strict accordance with the terms of said contract which said plans, specifications and special provisions are included in and form a part of said contract and shall maintain the said work contemplated until its final completion and acceptance as specified in Subsection 109.11 of the approved specifications, and save harmless said City of Biloxi from any loss or damages arising out of or occasioned by the negligence, wrongful or criminal act, overcharge, fraud, or any other loss or damage whatsoever, on the part of said principal(s), his (their) agents, servants, or employees in the performance of said work or in any manner connected therewith, and shall be liable and responsible in a civil action instituted by the City of Biloxi or any officer of the authorized in such cases, for double any amount in money or property, the City may lose or be overcharged or otherwise defrauded of, by reason of any wrongful or criminal act, if any, of the

Contractor(s) his (their) agents or employees, and shall promptly pay the said agents, servants and employees and all persons furnishing labor, materials, equipment or supplies therefore, including premiums incurred, for Surety Bonds, Liability Insurance, and Workman's Compensation Insurance; with the additional obligation that such Contractor shall promptly make payment of all taxes, licenses, assessments, contributions, damages, any liquidated damages which may arise prior to any termination of said principal's contract, any liquidated damages which may arise after termination of said principal's contract due to default on the part of said principal, penalties and interest thereon, when and as the same may be due this city, or any county, state, board, department, commission or political subdivision; in the course of the performance of said work and in accordance with Sections 31-5-51 et. seq. Mississippi Code of 1972, and other State statutes applicable thereto, and shall carry out to the letter and to the satisfaction of the City of Biloxi all, each and every one of the stipulations, obligations, conditions, covenants and agreements and terms of said contract in accordance with all terms thereof and all of the expense and cost and attorney's fees that may be incurred in the enforcement of the performance of said contract, or in the enforcement of the conditions and obligations of this bond, then this obligation shall be null and void, otherwise to be and remain in full force and virtue.

WITNESS our signatures and seals this the _____ day of _____, A.D., 20____.

_____ _____

(Contractor's) Principal Surety

By:_____ By:_____

Signature (Attorney-in-fact)

_____

Title:_____ _____

(Name and address of local Mississippi representative)

(Contractor's Seal) (Surety's Seal)

Revised: 06/09/2017

PAYMENT AND PERFORMANCE BOND

CONTRACT BOND FOR:

(PROJECT NAME)
(PROJECT NUMBER)

LOCATED IN THE CITY OF BILOXI
HARRISON COUNTY, MISSISSIPPI

Known all men by these presents: that we, _____Principal, a residing at _____ in the State of Mississippi, authorized to do business in the State of Mississippi, under the laws thereof, and _____ as Surety, are held and firmly bound unto the City of Biloxi, Mississippi, in the Penal sum of

_____ ($_____) Dollars, lawful money of the United States of America, to be paid to it for which payment well and truly to be made, we bind ourselves, our heirs, administrators, successors, or assigns jointly and severally by these presents.

Signed and sealed this the _____ day of _____A.D., 20___.

The conditions of this bond are such, that whereas the said _____

_____ principal, has (have) entered into a contract with the City of Biloxi,

Mississippi bearing the date of _____ day of _____, 20____, hereto annexed, for the construction of certain projects in the City of Biloxi, Mississippi as mentioned in said contract in accordance with the plans, specifications and special provisions therefore, on file in the office of the City Engineer, Biloxi, Mississippi.

Now therefore, if the above bounden _____ in all things shall stand to and abide by and well and truly observe, do keep and perform all and singular the terms, covenants, conditions, guarantees and agreements in said contract, contained on his (their) part to be observed, done, kept and performed and each of them, at the time and in the manner and form and furnish all of the material and equipment specified in said contract in strict accordance with the terms of said contract which said plans, specifications and special provisions are included in and form a part of said contract and shall maintain the said work contemplated until its final completion and acceptance by the City of Biloxi, and save harmless said City of Biloxi from any loss or damages arising out of or occasioned by the negligence, wrongful or criminal act, overcharge, fraud, or any other loss or damage whatsoever, on the part of said principal(s), his (their) agents, servants, or employees in the performance of said work or in any manner connected therewith, and shall be liable and responsible in a civil action instituted by the City of Biloxi or any officer of the authorized in such cases, for double any amount in money or property, the City may lose or be overcharged or otherwise defrauded of, by reason of any wrongful or criminal act, if any, of the Contractor(s) his (their) agents or

employees, and shall promptly pay the said agents, servants and employees and all persons furnishing labor, materials, equipment or supplies therefore, including premiums incurred, for Surety Bonds, Liability Insurance, and Workman's Compensation Insurance; with the additional obligation that such Contractor shall promptly make payment of all taxes, licenses, assessments, contributions, damages, any liquidated damages which may arise prior to any termination of said principal's contract, any liquidated damages which may arise after termination of said principal's contract due to default on the part of said principal, penalties and interest thereon, when and as the same may be due this city, or any county, state, board, department, commission or political subdivision; in the course of the performance of said work and in accordance with Sections 331-5-51 et. seq. Mississippi Code of 1972, and other State statutes applicable thereto, and shall carry out to the letter and to the satisfaction of the City of Biloxi all, each and every one of the stipulations, obligations, conditions, covenants and agreements and terms of said contract in accordance with all terms thereof and all of the expense and cost and attorney's fees that may be incurred in the enforcement of the performance of said contract, or in the enforcement of the conditions and obligations of this bond, then this obligation shall be null and void, otherwise to be and remain in full force and virtue.

WITNESS our signatures and seals this the _____ day of _____, A.D., 20___.

_____ _____

(Contractor's) Principal Surety

By:_____ By:_____

Signature (Attorney-in-fact)

_____

Title:_____ _____

(Name and address of local Mississippi representative)

(Contractor's Seal) (Surety's Seal)