

**SEALED BID**

**ORIGINAL**

**NOT TO BE OPENED BEFORE STATED BID DATE**

**Holliday Construction, LLC**

**534 HWY 26 East, Poplarville, MS 39470**

**Office: (601) 795-4389**

**Fax: (601) 652-1818**

Mississippi Gulf Coast  
Community College

2226 Switzer Road

Gulfport, MS 39507

**BID FOR:**

Mississippi Gulf Coast Community College Harrison County  
Campus Access Road Phase 1

**BID DUE:**

Tuesday October 3<sup>rd</sup>, 2023, 10:00 AM

**CERTIFICATE OF RESPONSIBILITY NUMBER: 13111-MC**





# AIA<sup>®</sup> Document A310<sup>™</sup> – 2010

## ***Bid Bond***

**CONTRACTOR:**

*(Name, legal status and address)*

Holliday Construction, LLC  
534 Hwy 26 E  
Poplarville, MS 39470

**SURETY:**

*(Name, legal status and principal place of business)*

The Gray Casualty & Surety Company  
P.O. Box 6202  
Metairie, LA 70009-6202

**OWNER:**

*(Name, legal status and address)*

Mississippi Gulf Coast Community College  
22226 Switzer Road  
Gulfport, MS 39507

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

**BOND AMOUNT:** Five Percent (5%) of the Amount Bid-----

**PROJECT:**

*(Name, location or address, and Project number, if any)*

Mississippi Gulf Coast Community College  
Harrison County Access Road Phase One

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.



If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 3rd day of October, 2023



Holliday Construction, LLC

(Contractor as Principal)


  
(Witness)

(Title)

The Gray Casualty & Surety Company

(Surety)

(Seal)

  
(Witness)

(Title)

  
Kimberly B. Barhum, Attorney-In-Fact  
MS Resident Agent



**THE GRAY INSURANCE COMPANY  
THE GRAY CASUALTY & SURETY COMPANY**

**GENERAL POWER OF ATTORNEY**

**Bond Number:** n/a      **Principal:** Holliday Construction, LLC  
**Project:** Mississippi Gulf Coast Community College Harrison County Campus Access Road Phase 1

KNOW ALL BY THESE PRESENTS, THAT The Gray Insurance Company and The Gray Casualty & Surety Company, corporations duly organized and existing under the laws of Louisiana, and having their principal offices in Metairie, Louisiana, do hereby make, constitute, and appoint: **Troy P Wagener, Jim E. Brashier, Dewey Mason, Kathleen B. Scarborough, Susan Skrmetta, Patrick T. Mason, Lisa R. Butler, Joey Beattie, Christopher H. Boone, Sharon Tuten, Charlotte Ramsey, Kimberly B. Barhum, David R. Fortenberry, Debbie L. Dunaway, and Ryan Anderson of Gulfport, Mississippi jointly and severally** on behalf of each of the Companies named above its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its deed, bonds, or other writings obligatory in the nature of a bond, as surety, contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the amount of \$25,000,000.00.

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both The Gray Insurance Company and The Gray Casualty & Surety Company at meetings duly called and held on the 26<sup>th</sup> day of June, 2003.

"RESOLVED, that the President, Executive Vice President, any Vice President, or the Secretary be and each or any of them hereby is authorized to execute a power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings, and all contracts of surety, and that each or any of them is hereby authorized to attest to the execution of such Power of Attorney, and to attach the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be binding upon the Company now and in the future when so affixed with regard to any bond, undertaking or contract of surety to which it is attached.

IN WITNESS WHEREOF, The Gray Insurance Company and The Gray Casualty & Surety Company have caused their official seals to be hereinto affixed, and these presents to be signed by their authorized officers this 4<sup>th</sup> day of November, 2022.



By:

*Michael T. Gray*

Michael T. Gray  
President  
The Gray Insurance Company

*Cullen S. Piske*

Cullen S. Piske  
President  
The Gray Casualty & Surety Company



State of Louisiana

ss:

Parish of Jefferson

On this 4<sup>th</sup> day of November, 2022, before me, a Notary Public, personally appeared Michael T. Gray, President of The Gray Insurance Company, and Cullen S. Piske, President of The Gray Casualty & Surety Company, personally known to me, being duly sworn, acknowledged that they signed the above Power of Attorney and affixed the seals of the companies as officers of, and acknowledged said instrument to be the voluntary act and deed, of their companies.



Leigh Anne Henican  
Notary Public  
Notary ID No. 92653  
Orleans Parish, Louisiana

*Leigh Anne Henican*

Leigh Anne Henican  
Notary Public, Parish of Orleans State of Louisiana  
My Commission is for Life

I, Mark S. Manguno, Secretary of The Gray Insurance Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 3<sup>rd</sup> day of October, 2023.

*Mark S. Manguno*

I, Leigh Anne Henican, Secretary of The Gray Casualty & Surety Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 3<sup>rd</sup> day of October, 2023.

*Leigh Anne Henican*







**SECTION 905-A  
BID PROPOSAL**

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Proposal of Holliday Construction, LLC

(hereinafter called "Bidder"), organized and existing under the laws of the State of Mississippi,

doing business as Holliday Construction, LLC.\*

**To: MISSISSIPPI GULF COAST COMMUNITY COLLEGE  
51 Main Street  
Perkinston, Mississippi**

(hereinafter called "Owner").

Gentlemen:

Bidder, in compliance with your invitation for bids for the construction of:

**MGCCC, HARRISON COUNTY CAMPUS  
ACCESS ROAD PHASE I**

(hereinafter called "Project") having examined the plans and requirements with related documents, and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the specified completion date, hereby proposes to furnish all labor, material, and supplies and to construct the project in accordance with the contract documents, within the time set forth therein, and at the price stated below. This price is to cover all expenses incurred in performing the work required under the contract documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" by Owner and to fully complete the project within amount of calendar days specified in the bid below. Bidder further agrees to pay, as liquidated damages, the sum of Three Hundred and Sixty Dollars (\$360.00) for each consecutive calendar day thereafter, as provided in Article 3.2 of the Agreement between Owner and Contractor.

Bidder acknowledges receipt of the following addenda:

Addendum No. 1 dated 9/29/23

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

\*Insert "a corporation", "a partnership", or "an individual" as applicable.



**PROJECT: MISSISSIPPI GULF COAST COMMUNITY COLLEGE ACCESS ROAD PHASE I****LOCATION: HARRISON COUNTY CAMPUS**

**Bidder agrees to perform all the Work described in the Specifications and shown on the Plans for the following unit prices:**

BASE BID SCHEDULE					
Pay Item	Item Description	Unit	Quantity	Unit Price	Extension
907-201-A001	Clearing and Grubbing	LS	1	126,500.00	126,500.00
907-202-A001	Removal of Obstructions	LS	1	115,000.00	115,000.00
907-202-B051	Removal of Concrete Curb, All Types	LF	1163	1.15	1,337.45
907-202-B080	Removal of Concrete Sidewalk	SY	112	1.15	128.80
907-202-B188	Removal of Pavement, All Types & Depths	SY	4030	1.15	4,634.50
907-202-E001	Saw Cutting of Asphalt & Concrete Surfaces (All Depths)	LF	270	6.90	1,863.00
203-A001	Unclassified Excavation, FM, AH	CY	1871	4.60	8,606.60
907-203-EX012	Borrow Excavation, AH, FME, Class B3	CY	4596	21.39	98,308.44
907-203-EX014	Borrow Excavation, AH, FME, Class B5	CY	10873	18.40	200,063.20
203-G001	Excess Excavation, FM, AH	CY	11519	6.33	72,857.68
216-A001	Solid Sodding, Centipede	SY	45	11.50	517.50
227-A001	Hydroseeding	SY	9097	1.15	10,461.55
234-A001	Temporary Silt Fence	LF	4725	4.06	19,181.14
209-A006	Geotextile Stabilization Fabric, Type VI	SY	9398	6.27	58,901.97
237-A001	Wattles, 12"	LF	560	10.50	5,879.72
907-644-F005	Utility Work - Water, 8" x 6" Hot Tapping Sleeve & 6" Valve	EA	1	4,516.97	4,516.97
907-644-J001	Utility Item, Fire Hydrant Relocation	EA	1	4,354.03	4,354.03
907-644-L001	Utility Work - Water, 6" Insertion Valve	EA	1	11,391.90	11,391.90
907-644-N001	Ductile Iron Fittings	LBS	40	5.70	228.16
907-304-I001	Size II Stabilizer Aggregate, Gravel, FM	CY	435	79.35	34,517.25
907-304-J001	Size 610 Crushed Stone Base, FM	CY	1526	N/A	N/A
	<b>OR</b>			-	-
907-304-K001	Size ¾" and Down Crushed Stone Base, FM	CY	1526	N/A	N/A
	<b>OR</b>			-	-
907-304-L003	Size 825B Crushed Stone Base, FM	CY	1526	76.59	116,876.34



Pay Item	Item Description	Unit	Quantity	Unit Price	Extension
403-A003	Asphalt Pavement, ST, 12.5-mm Mixture	TON	967	159.00	153,753.00
403-A006	Asphalt Pavement, ST, 19-mm Mixture	TON	1450	148.40	215,180.00
403-A015	Asphalt Pavement, ST, 9.5-mm Mixture	TON	725	169.60	122,960.00
406-A002	Cold Milling of Bituminous Pavement, All Depths	SY	52	106.00	5,512.00
407-A001	Asphalt for Tack Coat	GAL	1487	4.24	6,304.88
601-B001	Class "B" Structural Concrete, Minor Structures	CY	60	2,185.00	131,100.00
602-A001	Reinforcing Steel	LB	18389	2.16	39,757.02
603-CA012	18" Reinforced Concrete Pipe, Class III	LF	1682	60.31	101,434.69
603-CA027	24" Reinforced Concrete Pipe, Class III	LF	723	75.85	54,842.44
603-CA076	48" Reinforced Concrete Pipe, Class III	LF	240	184.00	44,160.00
603-CB008	48" Reinforced Concrete End Section	EA	4	3,967.50	15,870.00
603-CE008	29"x18" Concrete Arch Pipe, Class A III	LF	8	159.65	1,277.24
603-SB016	18" Branch Connection, Stub into Concrete Pipe	EA	1	1,552.50	1,552.50
603-SB032	29"x18" Branch Connection, Stub into Concrete Pipe	EA	1	1,552.50	1,552.50
604-A001	Castings	LB	2232	2.07	4,620.24
604-B001	Gratings	LB	12497	1.63	20,407.60
907-608-A001	Concrete Sidewalk, Without Reinforcement	SY	2282	90.10	205,608.20
907-608-C001	Detectable Warning Panels, Per Plans	SF	60	37.10	2,226.00
609-B002	Concrete Curb, Header	LF	227	23.32	5,293.64
609-B003	Concrete Curb, Special Design, Detail A	LF	280	42.40	11,872.00
609-C001	Concrete Integral Curb, Detail B	LF	214	21.20	4,536.80
609-D001	Combination Concrete Curb and Gutter Type 1	LF	4530	21.20	96,036.00
609-D004	Combination Concrete Curb and Gutter Type 2	LF	135	53.00	7,155.00
613-B002	Adjustment of Castings, Gratings & Utility Appurtenances	EA	5	575.00	2,875.00
907-614-A001	Concrete Driveway (Without Reinforcement, 6" Thickness)	SY	70	106.00	7,420.00
907-616-A001	10" Concrete Median Pavement	SY	243	132.50	32,197.50
618-A001	Maintenance of Traffic	LS	1	9,775.00	9,775.00
620-A001	Mobilization	LS	1	71,550.00	71,550.00
626-C003	6" Thermoplastic Edge Stripe, Continuous White	LF	4742	2.12	10,053.04



Pay Item	Item Description	Unit	Quantity	Unit Price	Extension
626-E003	6" Thermoplastic Traffic Stripe, Continuous Yellow	LF	7903	2.12	16,754.36
626-F004	6" Thermoplastic Edge Stripe, Yellow	LF	286	2.12	606.32
626-G002-01	Thermoplastic Detail Stripe, White	LF	739	4.24	3,133.36
626-G003-01	Thermoplastic Detail Stripe, Yellow	LF	645	4.24	2,734.80
626-H004	Thermoplastic Legend, White	SF	180	10.60	1,908.00
626-H005	Thermoplastic Legend, White	LF	1208	5.30	6,402.40
627-K001	Red-Clear Reflective High Performance Raised Markers	EA	4	10.60	42.40
627-L001	Two-Way Yellow Reflective High Performance Raised Markers	EA	134	10.60	1,420.40
627-P001	Two-Way Blue Reflective High Performance Raised Markers	EA	2	26.50	53.00
630-A001	Standard Roadside Signs, Sheet Aluminum, 0.080" Thickness	SF	89	37.10	3,301.90
630-A005	Standard Roadside Signs, Sheet Aluminum, 0.100" Thickness	SF	13	37.10	482.30
630-C003	Steel U-Section Post, 3.0 lb/ft	LF	176	10.60	1,865.60
637-C005	Traffic Signal Conduit, Underground, Sch 40 PVC Coated w/ Pull String, 2"	LF	40	8.91	356.50
682-D004	Underground Pull box with Concrete Pad	EA	2	891.25	1,782.50
907-809-A004	Geogrid Reinforced PMB Retaining Wall System	SF	576	.33	192.10
xxxxx	Contingency****	LS	1	\$50,000.00	\$50,000.00
<b>TOTAL BASE BID</b>					<b>\$ 2,374,044.41</b>

\*\*\* Pay Item to be used when requested by Owner. No payment will be given to contractor until Owner requested work is Completed.

*****ADD ALTERNATE 1*****					
Pay Item	Item Description	Unit	Quantity	Unit Price	Extension
637-C005	Traffic Signal Conduit, Underground, Sch 40 PVC Coated w/ Pull String, 2"	LF	88	6.90	607.20
682-A041	Underground Branch Circuit, AWG 8, 5 Conductor	LF	3435	11.50	39,502.50
682-F002	Secondary Power Controllers, Per Plans	EA	2	5,290.00	10,580.00
683-PP001	Lighting Assembly, Per Plans	EA	17	21,275.00	361,675.00
684-A004	Pole Foundation, 30" Diameter	CY	38	977.50	37,145.00
684-B004	Slip Casing, 30" Diameter	LF	221	28.75	6,353.75
<b>TOTAL ADD ALTERNATE 1</b>					<b>\$ 455,863.45</b>
*****ADD ALTERNATE 2*****					
216-A001	Solid Sodding, Centipede	SY	1650	6.33	10,436.25
907-616-A004	4" Concrete Median Pavement	SY	25	106.00	2,650.00





907-616-A001	10" Concrete Median Pavement	SY	11	132.50	1,457.50
TOTAL ADD ALTERNATE 2					\$ 14,543.75
*****ADD ALTERNATE 3*****					
Pay Item	Item Description	Unit	Quantity	Unit Price	Extension
907-616-C003	4" Colored and Imprinted Concrete Median Pavement	SF	14751	13.78	203,268.78
907-616-C004	10" Colored and Imprinted Concrete Median Pavement	SF	99	34.98	3,463.02
TOTAL ADD ALTERNATE 3					\$ 206,731.80

(NOTE: Bid shall include sales tax and all other applicable taxes and fees.)

Bidder has reviewed the plans, specifications, and necessary materials for the completion of the Project and will complete the work within 300 Calendar days days after the issuance of the Notice to Proceed.

Bidder will not be held liable for delays to work schedule caused by owner, poor weather conditions, and/or circumstances beyond the Bidder's control.

Upon receipt of written notice of the acceptance of this bid, the Bidder will execute the formal contract attached within ten (10) days and deliver a Surety Bond or Bonds as required by the General Conditions. The Bidder and his surety or bid security shall be liable to the extent of such bid bond or security for liquidated damages for delay and additional expenses to Owner resulting from its failure to execute the Contract.

Respectfully submitted:

By: \_\_\_\_\_

Title: \_\_\_\_\_

434.03

(SEAL - if Bid is by a Corporation)

Street: 534 Hwy 20 East

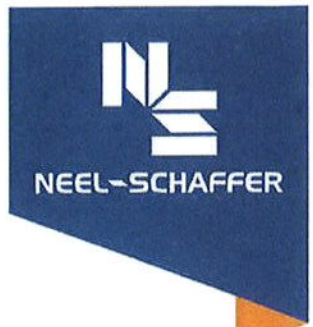
P.O. Box: NA

City: Poplarville

State: MS Zip: 39470

Certificate of Responsibility #: 13111- MC





September 29, 2023

Mississippi Gulf Coast Community College  
Harrison County Campus Access Road Phase I  
Addendum Number 1

Notice to All Bidders/Plan Holders:

The purpose of this addendum is to address the following:

1. In the specifications, add attached Notice to Bidders Number 2, which includes a copy of the responses to questions received.
2. In the specifications, replace Special Provision Number 907-304-1 of the specification with attached Special Provision Number 907-304-1.
3. In the specifications, replace Section 905-A Bid Proposal pages 1 of 5 to 5 of 5 with attached Section 905-A Bid Proposal pages 1 of 5 to 5 of 5.
4. In the plans, replace Drawing Number 8 and Drawing Number 9 with the attached Drawing Number 8 and Drawing Number 9.
5. The date, time, and location of the bid opening has not changed.

attachment

Sincerely,

NEEL-SCHAFFER, INC

A handwritten signature in blue ink, reading 'Damon Torricelli', is positioned above the printed name.

Damon Torricelli, P.E., CPESC, CPMSM  
Senior Project Manager

engineers | planners | surveyors | environmental scientists | landscape architects

P: 228.374.1211 | F: 228.374.1216

772 Howard Avenue  
Biloxi, MS 39530

[www.neel-schaffer.com](http://www.neel-schaffer.com)





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**SECTION 904 – NOTICE TO BIDDERS NO. 2**

**DATE: 09/29/2023**

**SUBJECT: QUESTIONS & ANSWERS**

The following are responses to questions received:

Question 1 – Are there any utilities that have conflicts with this roadway? If so, have they been contacted yet about the issues?

Response 1 – The known utility conflicts are shown on the plans as relocated by others, which have been notified of the project.

Question 2 – Will there be a pre bid meeting?

Response 2 – No pre-bid meeting will be held.

Question 3 – What is the engineers estimate for the project?

Response 3 – The project budget including the alternates is in the range of \$3.5 to \$4.0 million.

Question 4 – Will crushed concrete be allowed to substitute for limestone on the base if it meets 825B MDOT specifications?

Response 4 – An addendum will be issued which will allow the contractor to choose on bidding one of the following: Size 610 Crushed Stone Base or Size ¾” and Down Crushed Stone Base or Size 825B Crushed Stone Base.



**DATE: 09/29/2023****SECTION 304 - GRANULAR COURSES****Subsection 304.02.3 – Stabilizer Aggregate**

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

**Subsection 304.02.3 – Stabilizer Aggregate.** 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 Engineer or his authorized representative.

**Subsection 304.02.4 - “610” Limestone.** 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)	
<u>Square Mesh Sieves</u>	<u>Specification</u>
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.





## GRANULAR COURSES (Continued)

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### **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.

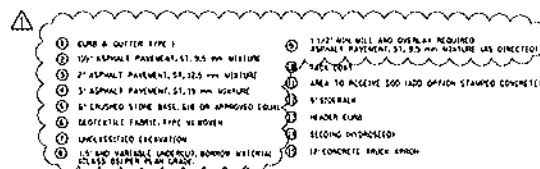
If the Contractor elects to use “610” limestone to maintain the flow of traffic during construction it will not be measured for separate payment.

### **Subsection 304.05 – Basis of Payment**

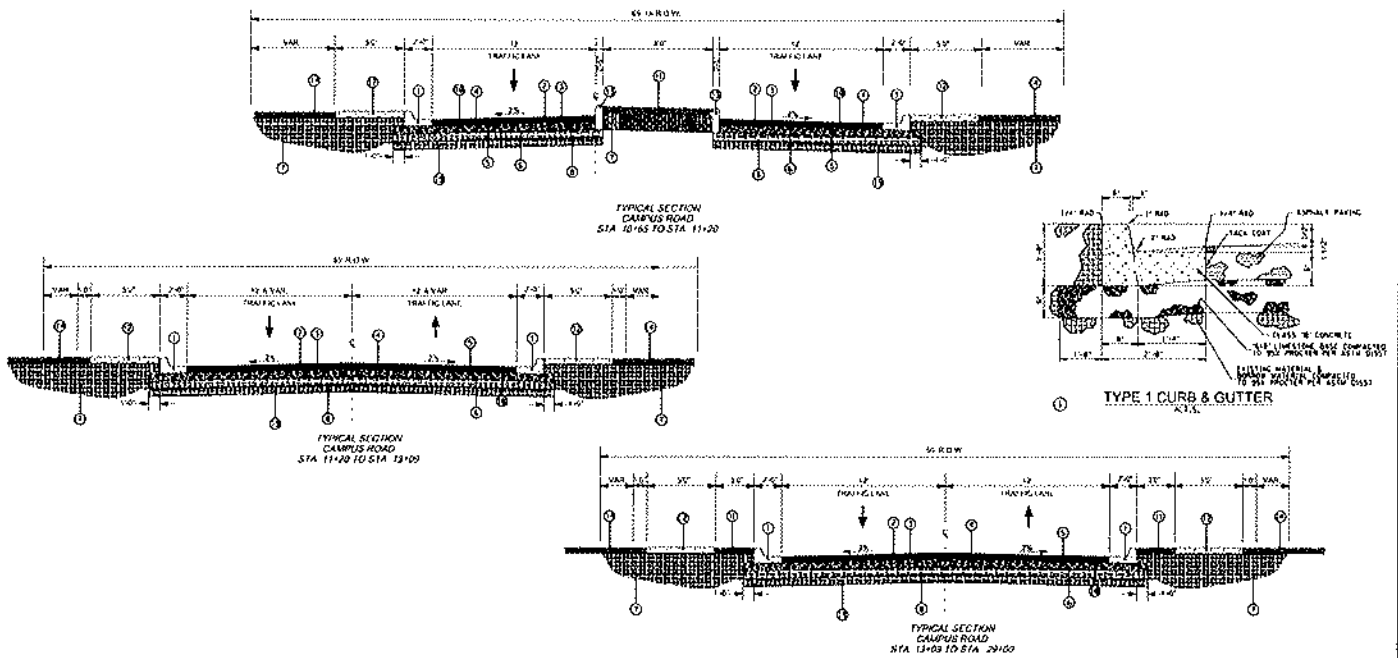
Under the heading “Payment will be made under” at the end of the other pay items, add the following pay item numbers:

907-304-I001: Size II Stabilizer Aggregate (Gravel)(FM)	- per cubic yard
907-304-J001: Size “610” Crushed Stone Base (FM)	- per cubic yard
907-304-K001: Size 3/4” and Down Crushed Stone Base (FM)	-per cubic yard
907-304-L001: Size 825B Crushed Stone Base, (FM)	-per cubic yard



[illegible]





- 1 CURB & GUTTER TYPE 1  
 2 1/2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 3 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 4 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 5 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 6 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 7 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 8 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 9 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 10 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 11 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME  
 12 2" ASPHALT PAVEMENT, 500,000 PSI VOLUME

NOTICE TO DRAWING HOLDER			MISSISSIPPI GULF COAST COMMUNITY COLLEGE HARRISON COUNTY CAMPUS ACCESS ROAD			TYPICAL SECTIONS CAMPUS ROAD	
NEEL-SCHAFER, INC. HEREFORTH, MISSISSIPPI 39201 THIS DRAWING IS THE PROPERTY OF NEEL-SCHAFER, INC. AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF NEEL-SCHAFER, INC. ANY VIOLATION OF THIS NOTICE WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.	NO.	DATE	BY	REVISION	DESCRIPTION	WORKING NUMBER	DRAWING NUMBER
	1	10/23	DR	1	10/23	TYP-1	08





CERTIFICATE OF OWNERSHIP AND AUTHORITY  
HOLLIDAY CONSTRUCTION, LLC



It is hereby certified by the undersigned, that Holliday Construction, LLC is a Limited Liability Company organized and existing under the laws of the state of Mississippi, and

**DOES HEREBY CERTIFY:**

**FIRST:** That the company was formed October 1, 2001, pursuant to a Certificate of Formation filed with the Secretary of State of Mississippi on October 1, 2001.

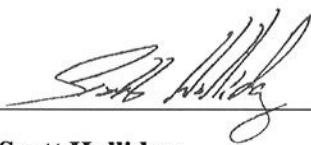
**SECOND:** That an accompanying Operating Agreement in which the terms of the operation of the LLC, the governance of the LLC, the management of the business and affairs of the LLC and other matters were set forth therein, is on file.

**THIRD:** That under Article IV of said Operating Agreement, Section 4.01 allocated the ownership of Holliday Construction, LLC, of Poplarville, Mississippi, as follows:

**Henry Scott Holliday:                    One Hundred Percent (100%) and acts as President.**


**Fourth:** That Henry Scott Holliday is hereby authorized to sign on behalf of the Company any contracts or forms for the company.

**Fifth:** That Holliday Construction, LLC is still duly organized and existing on this day, and the Operating Agreement still has full force and effect.

  
\_\_\_\_\_  
**Henry Scott Holliday**

9/25/23  
\_\_\_\_\_  
**Date**

Witness my hand seal this 25<sup>th</sup> day of September year of 2023.

  
\_\_\_\_\_  
**Ruthie Keller, Notary Public**







CHAIRMAN OF THE BOARD





**Company Contact Information**  
**Mon-Sat 7am-6pm**  
*26 Years of Experience in Debris Removal*



**Holliday Construction, LLC**  
**534 Highway 26 East**  
**Poplarville, MS 39470**

**Tel: 601-795-4389**  
**Fax: 601-795-2854**  
**www.hollidayconstruction.com**

**Authorized to obligate Holliday Construction, LLC**

Scott Holliday	Managing Member	(601) 795-7403
Ivan Holliday	Field Manager	(601) 795-5707
Sarah Phillips	Contract Admin	sarah@hollidaycontract.com
Abbi Holliday	Contract Admin	abbigayle@hollidaycontract.com
Ruthie Keller	Gen. Management	ruthie@hollidaycontract.com
Hiram Smith	Field Manager	hiram@hollidaycontract.com



*Michael Watson*  
OWNER

This is not an official certificate of good standing.

**Name History:**

Name	Name Type
HOLLIDAY CONSTRUCTION, LLC	Legal

**Business Information**

<b>Business Type:</b>	Limited Liability Company
<b>Business ID:</b>	708001
<b>Status:</b>	Good Standing
<b>Effective Date:</b>	10/11/2001
<b>State of Incorporation:</b>	Mississippi
<b>Principal Office Address:</b>	

**Registered Agent**

**Name**  
Henry S Holliday, Member  
534 Hwy 26 E  
POPLARVILLE, MS 39470

**Officers & Directors**

Name	Title
Henry S Holliday COWART-HOLLIDAY ROAD POPLARVILLE, MS 39470	Member





# REFERENCES



## References:

### 1. **Mason Key**

District Area Engineer  
Mississippi Department of Transportation  
6388 Highway 49 North  
Hattiesburg, Mississippi 39401  
601-584-4050  
[mkey@mdot.ms.gov](mailto:mkey@mdot.ms.gov)

### 2. **John Lee**

Project Manager  
Huey P. Stockstill, LLC  
P.O. Box 758  
Picayune, Mississippi 39466  
601-795-7262  
[Johnl@hueystockstill.com](mailto:Johnl@hueystockstill.com)

### 3. **David Fortenberry**

Bonding Agent  
Cadence Insurance  
16 Thompson Park  
Hattiesburg, Mississippi 39401  
601-554-7320  
[david.fortenberry@cadenceinsurance.com](mailto:david.fortenberry@cadenceinsurance.com)

### 4. **Rossi Creel**

Previous Mayor of Poplarville, Mississippi  
200 Highway 26 East  
Poplarville, Mississippi 39470  
601-795-8161  
Fax: 601-795-0141

### 5. **David Jones**

Branch Manager  
Vulcan Materials Company  
509 Ave. D  
Laurel, Mississippi 3944  
601-428-4655  
Fax: 205-298-2901  
[jonesda@vmcmail.com](mailto:jonesda@vmcmail.com)

## Relationship:

District Area Engineer for numerous debris contracts with Holliday Construction, LLC.

January 2020-Present

Project Manager for numerous past projects with Holliday Construction, LLC.

2010-Present

Bonding Agent for each & every contract concerning Holliday Construction, LLC.

2002-Present

Previous Mayor of the City of Poplarville whom Holliday Construction, LLC has done numerous jobs for.

May 2017 – May 2021

Branch Manager for a preferred materials vendor of Holliday Construction, LLC.

2013-Present





## PROJECT REFERENCES



### Holliday Constructions Project References

Project #1: Gulf Park Tennis Court Demolition

Location: Long Beach, Ms. Contract Amount: \$43,720.00

Owner: USM-Gulf Park Campus

Contact: Jason Cantu Phone No.: 228-214-3274

Engineer: M/P Design Group

Contact: Ben Sellers Phone No.: 228-388-1950

Project #2: Repair of Monster Ditch No.1

Location: Ocean Springs, Ms Contract Amount: \$299,400.50

Owner: The City of Ocean Springs

Contact: Sarah Phone No.: 228-282-3896

Engineer: Overstreet & Associates

Contact: James Foster Phone No.: 228-238-6481

Project #3: Jones County Debris Removal MDOT

Location: Jones County, Ms Contract Amount: \$478,260.00

Owner: MDOT

Contact: Andy Waites Phone No.: 601-428-8434

Engineer: Mason Key – MDOT Engineer

Contact: Mason Key Phone No.: 601-319-0046

Project #4: North Beach Blvd Drainage

Location: Bay St. Louis, Ms. Contract Amount: \$192,484.00

Owner: Hancock County Board of Supervisors

Contact: N/A Phone No.: 228-467-0172

Engineer: Compton Engineering

Contact: John Studstill Phone No.: 228-467-2770







## PROJECT REFERENCES



Project #5: Campbell Loop Bridge Replacement

Location: Hattiesburg, Ms. Contract Amount: \$563,541.70

Owner: City of Hattiesburg

Contact: Lamar Rutland Phone No.: 601-545-4540

Engineer: Shows, Dearman, & Waits

Contact: Alex Kirkland Phone No.: 601-674-6890

Project #6: North 28<sup>TH</sup> Ave. Bridge Replacement

Location: Hattiesburg, Ms. Contract Amount: \$549,511.75

Owner: City of Hattiesburg

Contact: Lamar Rutland Phone No.: 601-545-4550

Engineer: Shows, Dearman, & Waits

Contact: Lou Thomas Phone No.: 601-544-1821



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HARRISON COUNTY CAMPUS  
ACCESS ROAD PHASE I

**GENERAL**

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**APPENDIX A – BORING LOGS**

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## 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 minimum proposed density program consists of one test per lift per 250 linear feet of pavement construction. Classification tests are to be performed on fill soils initially and routinely during subgrade preparation.

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 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 Engineer or his authorized representative.

### SUBMITTAL AND SHOP DRAWINGS

General - Shop drawings shall be delivered to the 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 Engineer or his authorized representative.

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

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**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 Engineer or his authorized representative for approval.

**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 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. 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.

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**STORM DRAIN VIDEO** – Once “lamping” testing is complete all storm drain 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”, 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 installation.
- b. 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.
- c. 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.
- d. The video camera shall stop at each joint and pan around the joint 360° so that the entire joint is visible.
- e. The video camera shall stop at any suspected insufficient areas as directed by the Engineer or his authorized representative.
- f. The contractor shall notify the Engineer or his authorized representative 24 hours in advance of video operations. The Contractor shall make arrangements for the Engineer or his authorized representative to be present to witness the making of the video.
- g. The Contractor shall give a copy of the video (in electronic format) to the Engineer or his authorized representative for review and approval of the new storm drain lines prior to the installation of the road subbase.
- h. In the event that any imperfection(s) in any of the new storm drain 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. 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 Engineer or his authorized representative.
- i. Making video(s) of storm drain 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 line.



### ***Application for Payment Checklist***

The following documents shall be submitted as noted.

Initial & Date

Application for Payment	
Continuation Sheet	
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 (1 Original)	
Stormwater Erosion & Sediment Control Inspection Form (1 Copy)	
Redline drawings of field changes or letter stating there are none	

## PAGE 1 OF 2 PAGES

Distribution to:

OWNER ☐

CONSTRUCTION MANAGER ☐

ARCHITECT ☐

CONTRACTOR ☐

FIELD ☐

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

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

CHANGE ORDER SUMMARY			
Number	Date Approved		
<b>TOTALS</b>		\$0	\$0
<b>Net change by Change Orders</b>			

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<br>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.)

1  
00-0000  
00-0000

[illegible]

## Contractor's Partial Release of Liens

PROJECT NAME & NUMBER: \_\_\_\_\_

Pay Estimate No. \_\_\_\_\_

TO OWNER:

Mississippi Gulf Coast Community College  
P.O. Box 609  
Perkinston, MS 39573

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:

Mississippi Gulf Coast Community College  
P.O. Box 609  
Biloxi, MS 39573

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:

Mississippi Gulf Coast Community College  
P.O. Box 609  
Biloxi, MS 39573

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:

Mississippi Gulf Coast Community College  
P.O. Box 609  
Biloxi, MS 39573

---

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

**Mississippi Gulf Coast Community College**  
**P.O. Box 609**  
**Perkinston, MS 39573**

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):

## ADVERTISEMENT FOR BIDS

### HARRISON COUNTY ACCESS ROAD PHASE I

#### MISSISSIPPI GULF COAST COMMUNITY COLLEGE

The Mississippi Gulf Coast Community College, hereafter referred to as Owner, will receive sealed bids for the Campus Access Road Phase I Project for the Harrison County Campus, at the Business Office of the Harrison County Campus located at 2226 Switzer Road, Gulfport, Mississippi, until 10:00 A.M., Local Time, October 3, 2023 for supplying all labor, equipment, and materials (as specified) necessary for the construction of the above referenced project. All bids received will be publicly opened and read aloud at the conference room of the Vice-President of the Harrison County Campus. The work shall consist of constructing a new road and roundabout that will connect Eula Road to Pass Road. The project will include curb and gutter, sidewalks, striping, and lighting along the new road at the Harrison County Campus.

The above general outline of features of the work does not in any way limit the responsibility of the Contractor to perform all work and furnish all labor, equipment and materials required by the specifications and the drawings referred to therein.

Bidder must be qualified under Mississippi Law and show current Certificate of Responsibility issued by the Mississippi State Board of Public Contractors establishing his classification as to the value and type of construction on which he is authorized to bid.

Each Bidder shall write his Certificate of Responsibility Number on the outside of the sealed envelope containing his proposal.

Proposals shall be submitted in duplicate, sealed and deposited with the Owner prior to the hour and date hereinbefore designated. No bidder may withdraw his bid within 90 days after the actual date of the opening thereof.

Awarding public contracts to non-resident Bidders will be on the same basis as the non-resident bidder's state 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 is to attach to his bid a copy of his resident state's current laws pertaining to such state's treatment of non-resident contractors.

Each Bidder must deposit with his proposal, a Bid Bond or Certified Check in an amount equal to five percent of his bid, payable to the Owner, as bid security. Bidders shall also submit a current financial statement, if requested, by the Owner. The successful bidder will be required to furnish a Payment Bond and Performance Bond each in the amount of 100 percent of the contract amount.

*Bid documents are being made available via digital copy through Central Bidding at [www.centralbidding.com](http://www.centralbidding.com). Interested bidders should log-in or register for an account to view and/or order Bid Documents. All plan holders are required to have a valid email address for registration. The cost of bid documents is non-refundable and must be purchased through the website (digital only). Bids may be submitted electronically or in hard copy form. If anyone prefers to submit their bid electronically instead of in a sealed envelope, they can do so through the Central Bidding website only. Questions*

Advertisement for Bids

Section 901

1 of 2



*regarding website registration and online orders are directed to Central Bidding at (225) 810-4814.*

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

Any questions that bidders might have should be directed to [damon.toricelli@neel-schaffer.com](mailto:damon.toricelli@neel-schaffer.com). The question period will end one week prior to the bid opening date.

No bidder may withdraw their bid within one hundred twenty (120) days after the actual date of the opening thereof and each bidder shall hold their bid prices for one hundred twenty (120) days after the actual date of the opening thereof.

Mississippi Gulf Coast Community College reserves the right to reject any and all bids and to waive any informalities or irregularities therein.

BOARD OF TRUSTEES  
MISSISSIPPI GULF COAST COMMUNITY COLLEGE

Publish Dates:

August 30, 2023  
September 6, 2023

---

**SECTION 904 - NOTICE TO BIDDERS NO. 1**

**CODE: (IS)**

**DATE: 06/30/2023**

**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 Edition of the Standard Specifications for State Aid 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.

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**SECTION 904 - NOTICE TO BIDDERS NO. 4****CODE: (IS)****DATE: 06/30/2023****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" .....	"AUTHORIZED MISSISSIPPI GULF COAST COMMUNITY COLLEGE (MGCCC) REPRESENTATIVE"
"COMMISSION" .....	"MGCCC"
"HIGHWAY COMMISSION" .....	"MGCCC"
"DEPARTMENT" .....	"MGCCC"
"ENGINEER" .....	"DESIGN ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"PROJECT ENGINEER" .....	"DESIGN ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"RESIDENT ENGINEER" .....	"DESIGN ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"CHIEF ENGINEER" .....	"DESIGN ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"CONSTRUCTION ENGINEER" .....	"DESIGN ENGINEER" OR "AUTHORIZED REPRESENTATIVE"
"STATE" .....	"MGCCC"
"OWNER" .....	"MGCCC"
"DESIGN ENGINEER" .....	"NEEL-SCHAFER, INC."
"ENGINEER" .....	"NEEL-SCHAFER, INC."

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**SECTION 904 - NOTICE TO BIDDERS NO. 296**

**CODE: (IS)**

**DATE: 06/30/2023**

**SUBJECT: PROPOSAL COMPLETION**

The proposal consists of a Base Bid and three (3) Add Alternates, which the Bidder shall submit pricing on each. Failure to submit bids for all Add Alternates shall result in the bid being incomplete and shall be rejected. The Owner may or may not choose to award the Add Alternate 1 (lighting) and will select to award either Add Alternate 2 or Add Alternate 3.

The proposal also requires the Bidder to specify the number of calendar days necessary to complete the project after the issuance of the Notice to Proceed which will determine the contract time. Failure to specify the number of calendar days will result in the bid being incomplete and shall be rejected.

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**SECTION 904 - NOTICE TO BIDDERS NO. 298**

**CODE: (IS)**

**DATE: 06/30/2023**

**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.

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 Engineer for City of Biloxi approval prior to use.

**SECTION 904 - NOTICE TO BIDDERS NO. 1546**

**CODE: (SP)**

**DATE: 06/30/2023**

**SUBJECT: Advancement of Materials**

Bidders are advised that **NO ADVANCEMENT OF MATERIALS**, as addressed in Subsection 109.06.2 of the Standard Specifications, will be allowed on this project.

**NTB 1878 Supplement**  
**PRIME CONTRACTOR CERTIFICATION**

(File prior to the Issuance of Notice to Proceed)

**PRIME CONTRACTOR'S MAILING ADDRESS AND TELEPHONE NUMBER:**

NAME: \_\_\_\_\_

NUMBER AND STREET (P. O. BOX): \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

TELEPHONE NUMBER (INCLUDING AREA CODE): \_\_\_\_\_

NAME OF OWNER: \_\_\_\_\_

STORM WATER GENERAL NPDES PERMIT NUMBER: MSR 15

PROJECT NAME: \_\_\_\_\_

PROJECT LOCATION: \_\_\_\_\_ County (ies) \_\_\_\_\_

PERMIT COVERAGE FOR MATERIAL PITS MAY BE NEEDED AND MUST BE APPLIED FOR BY THE CONTRACTOR SEPARATELY.

I CERTIFY THAT I AM THE PRIME CONTRACTOR OF THIS PROJECT, HAVE THE PRIMARY RESPONSIBILITY TO FULLY COMPLY WITH ALL OF THE REQUIREMENTS OF THE ABOVE REFERENCED GENERAL NPDES PERMIT, AND ACCEPT FULL LIABILITY FOR NOT COMPLYING WITH THESE REQUIREMENTS.

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE SIGNED

\_\_\_\_\_  
PRINTED NAME

\_\_\_\_\_  
TITLE

THIS DOCUMENT SHALL BE SIGNED ACCORDING TO THE GENERAL PERMIT, CONDITION NO. T-4,  
PAGE 24 OF 34.

**SECTION 904 - NOTICE TO BIDDERS NO. 1878**

**CODE: (SP)**

**DATE: 06/30/2023**

**SUBJECT: Storm Water Discharge Associated with Construction Activity  
( $\geq 1$  and  $< 5$  Acres)**

Construction Storm Water General NPDES Permit MSR 15 to discharge storm water associated with construction activity is required. This project is granted permission to discharge treated storm water into State waters. Copies of said permit and Storm Water Pollution Prevention Plan (SWPPP) are on file at [https://mdot.ms.gov/documents/Environmental/Permits/Stormwater/Small%20Construction%20General%20Permit%20\(MSR15\).pdf](https://mdot.ms.gov/documents/Environmental/Permits/Stormwater/Small%20Construction%20General%20Permit%20(MSR15).pdf).

Prior to the execution of the contract, the successful bidder shall execute and deliver to the Design Engineer an original signed copy of the completed Prime Contractor Certification (Form No. 1).

Failure of the bidder to execute and file the completed Prime Contractor Certification (Form No. 1) shall be just cause for the cancellation of the award.

The executed Prime Contractor Certification (Form No. 1) shall be prima facie evidence that the bidder has examined the permit, is satisfied as to the terms and conditions contained therein, and that the bidder has the primary responsibility for meeting all permit terms and conditions including, but not limited to, the inspection and reporting requirements of the permit. For this project, the Contractor shall furnish, set up and read, as needed, an on-site rain gauge.

The Contractor must furnish the Project Engineer a completed copy of the Small Construction Notice of Intent (SCNOI) along with the Contractor's Erosion Control Plan.

The Contractor shall make inspections in accordance with condition No. S-4, Page 19, and shall furnish the Project Engineer with the results of each weekly inspection as soon as possible following the date of inspection. The weekly inspections must be documented monthly on the Inspection and Certification Form, a copy of which is provided. The Contractor's representative and the Project Engineer shall jointly review and discuss the results of the inspections so that corrective action can be taken. The Project Engineer shall retain copies of the inspection reports.

The Engineer will have the authority to suspend all work and/or withhold payments for failure of the Contractor to carry out provisions of MDEQ's Storm Water Construction General Permit, the erosion control plan, updates to the erosion control plan, and /or proper maintenance of the BMPs.

Securing a permit (s) for storm water discharge associated with the Contractor's activity on any other regulated area the Contractor occupies, shall be the responsibility of the Contractor.



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**SECTION 904 - NOTICE TO BIDDERS NO. 2382**

**CODE: (IS)**

**DATE: 06/30/2023**

**SUBJECT: STATUS OF RIGHT-OF-WAY**

Although it is desirable to have acquired all rights-of-way and completed all utility adjustments and work to be performed by others prior to receiving bids, sometimes it is not considered to be in the public interest to wait until each and every such clearance has been obtained. The bidder is hereby advised of possible unacquired rights-of-way and relocations of utilities which have not been completed.

In the event right of entry is not available to ALL parcels of right-of-way and/or all work that is to be accomplished by others on the date set forth in the contract for the Notice to Proceed is not complete, the Department will issue a restricted Notice to Proceed.

**SECTION 904 - NOTICE TO BIDDERS NO. 7400**

**CODE: (SP)**

**DATE: 08/15/2023**

**SUBJECT: Cooperation Between Contractors**

The Bidder's attention is hereby called to Subsection 105.07, Cooperation between Contractors, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction.

The Bidder is advised that utility poles, lines, etc. are to be relocated during construction by utility companies at the north and south ends of the project. The bidder is also advised that a new sign is to be installed in the island at the Pass Road end of the project by another contractor as part of a different contract. The bidder is again advised of a traffic signal that is being installed at the Pass Road end of the project by another contractor as part of a different contract.

The Contractor shall cooperate in all respects and shall coordinate construction of all phases of work at the north and south ends of this project with the utility companies and the contractor(s) of the adjacent projects.

**DATE: 06/30/2023**

**SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS**

**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 Appendix A of these specifications. It is understood that such information was obtained and is intended for design and estimating purposes. It is made available to bidders so they may have access to identical subsurface information available to the Owner. 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 figures as noted on the Proposal Forms.

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 for 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 14<sup>th</sup> 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:

Bids may be submitted electronically or in hard copy form. Hard copies 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. Electronic bids shall be submitted through Central Bidding at [www.centralbidding.com](http://www.centralbidding.com). Questions regarding website registration are directed to Central Bidding at (225) 810-4814. All proposals shall be submitted prior to the time and place specified in the Advertisement. Proposals received after the time for opening of bids will not be accepted.

**Subsection 102.10 – Withdrawal or Revision of Proposals.**

Delete Subsection 102.10 in toto and insert the following:

A bidder may request to withdraw or revise a proposal after it has been deposited with the Owner provided the Engineer has received in writing the request for such withdrawal or revision prior to the time set for opening proposals. The Owner and Engineer will review the request and determine if the request is justified.

**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.

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**SPECIAL PROVISION NO. 907-103-1**

**CODE: (SP)**

**DATE: 06/30/2023**

**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”.

**DATE: 06/30/2023**

**SECTION 105 - CONTROL OF WORK**

**Subsection 105.01 – Authority of the Engineer**

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

The Engineer has the right to suspend the 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, or for failure to carry out orders.

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

All correspondence concerning a project shall be sent to the 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 benchmarks 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 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 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 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 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 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 Owner. Control points and benchmarks shall be re-established by a Licensed Registered Land Surveyor approved by the Engineer or his authorized representative. All control points and benchmarks lost during construction must be re-established and approved by the 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 Owner decides to affirm the claim, an adjustment will be made as applicable. If the Owner denies the claim, the Contractor may either accept the Owner'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 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 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.

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 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.

**DATE: 06/30/2023**

**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:

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 Owner 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 Engineer or his authorized representative for review and approval. Any material used on the project without prior written approval by the 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 Engineer or his authorized representative shall be removed and replaced at no additional cost to the Owner.

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 Engineer or his authorized representative prior to use. The contractor shall be responsible for submitting all information needed by the 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.

**DATE: 06/30/2023**

**SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

**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 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 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 107.17 - 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 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 Engineer or his authorized representative prior to the pay request being processed. The final record drawings in both digital and hard copy form shall be delivered to the 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.

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**SPECIAL PROVISION NO. 907-108-4**

**CODE: (SP)**

**DATE: 06/30/2023**

**SECTION 108 - PROSECUTION AND PROGRESS**

**SUBJECT: Subletting of Contract**

**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 of 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 Engineer or his authorized representative for his approval no later than three (3) working days prior to 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. In the event the Contractor submits a viable, contractually compliant schedule which shows the Project completion date earlier than the Contracted end date, the acceptance of such will not change the allowable Contract Time. This "extra time" will be designated as "Project Float" and added to the end of the Contractor's schedule. This "Project Float" will be a project resource for both the Contractor and the OWNER. It shall not be for the exclusive use of either party.

The Contractor shall meet with the OWNER or OWNER'S AUTHORIZED REPRESENTATIVE each month to review the actual progress made to date on

the Project, the activities started and completed to date and the percentage of Work completed to date on each activity not yet complete.

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 or OWNER'S AUTHORIZED REPRESENTATIVE with each pay request. Failure to submit an up-to-date progress schedule that reflects the current progress of the Project shall STOP the pay estimate process. Any revisions to the progress schedule shall be submitted to the OWNER or OWNER'S AUTHORIZED REPRESENTATIVE for approval.

Monthly schedule updates shall include the following:

- a) Activity Status Report
- b) Proposed Revisions Report
- c) Compact Disc (CD) or USB Drive with Updated Schedule File
- d) Narrative Report
  - a. The Monthly Narrative Report shall contain the following information:
    - i. Description of overall Project status
    - ii. Description of problem areas (referencing any pending change orders as appropriate)
    - iii. Current and anticipated delays
      - a) Cause of delay
      - b) Corrective action and schedule adjustments to correct the delay
      - c) Known or potential impact of the delay on other activities or milestones
    - iv. Changes in Construction Sequence
    - v. Pending Items and status thereof, including but not limited to:
      - a) Pending Change Orders
      - b) Time Extension Requests
      - c) Other Issues relating to Contract Time
    - vi. Contract Completion Date Status:
      - a) If ahead of schedule, note the number of calendar days ahead
      - b) If behind schedule, note the number of calendar days behind
    - vii. Any Other Project or Schedule Issues/Concerns



Additionally, a combined three (3) week "Look-Ahead Schedule" shall be provided by the Contractor to the OWNER or OWNER'S AUTHORIZED REPRESENTATIVE for review and discussion at Progress Meetings.

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 or OWNER'S AUTHORIZED REPRESENTATIVE. 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. The contract time on this project will be determined by the number of calendar days specified by the Bidder to complete the project. The contract time will commence with the Beginning of Contract Time established by the issuance of the Notice to Proceed and a Completion Date, which will be determined by the submitted by the Contractor to complete the work. The contract time determined by the Contractor shall include time for the required waiting periods for placement of permanent pavement markings and all the necessary burn-in periods for electrical items.

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 in Calendar Days in the same ratio that the cost of such added work, exclusive of the cost of work altered by Supplemental Agreement for which a time adjustment is made for such altered

work in the Supplemental Agreement, bears to the total value of the original contract.

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.

At any given date, the ratio of the accumulated monetary value of that part of the work actually accomplished to the total contract bid amount adjusted to reflect approved increases or decreases shall determine the "percent complete" of the work.

The percentage elapsed time shall be calculated as a direct ratio of the expired Calendar Days to the total Calendar Days provided for in the contract.

One exception to the extension of Contract Time for calendar day projects will be determined from monthly weather deviations. This approach will be based on a 55-year weather study produced from Keesler AFB records. The weather study outlines rainfall characteristics for each month of the year. An average rainfall amount is determined for each month of the year and a frequency of rain days that precipitate 0.5 inches or greater. To justify time extensions the Contractor will be required to prove the average month deviates from rainfall study records. For instance, a calendar day project has built-in time for the average frequency of rain days and associated recovery days with these rain days for the cumulative months during the Contract Time. Time extensions due to weather conditions will be analyzed month to month to fit the 55-year weather study results. Once the Contractor contests months with above average rainfall frequencies, all other whole months will be analyzed for above and below average rainfall frequencies for the Contract Time. Time extensions will be based on the difference of all the months' rainfall frequencies from the normal rainfall frequencies for each month (see page 5 of this special provision), plus or minus and totaled to determine if an above month normal rainfall frequency has occurred during the Contract Time.

The monthly rainfall frequency is determined by the number of days a month that rainfall exceeds 0.5 inches in a calendar day. The Engineer will require the Contractor to supply rain data information from Keesler AFB Weather Center to verify their claims. Once this criterion has been proven, an extension of Contract Time will be negotiated from information supplied by the Contractor to the Engineer.

No extension of the Specified Completion Date will be granted except as provided herein, and, except for abnormal delays caused solely by the Owner or other governmental authorities, or unforeseeable disastrous phenomena of nature of the magnitude of earthquakes, hurricanes, tornadoes, or flooded essential work areas, which are deemed to unavoidably prevent prosecuting the work.

Any revision of the Specified Completion Date provided for in the contract will be made automatically on the Specified Completion Date as established in the contract, and at a later date if additional conditions so warrant.

In the event the Engineer determines that the completion date when extended as provided in the contract would cause certain items of work or portions thereof, properly prosecuted in the normal sequence and manner, to fall within a period of seasonal or temperature limitations, he will make a determination as to the scope of unavoidable delays, if any, contemplated because of such seasonal or temperature limitations for periods in excess of those contemplated in the original contract. The Owner may thereupon establish a revised contract completion date. The Owner shall notify the Contractor and his Surety in writing of such established completion date as warranted by the engineering determination.

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 schedule and the second paragraph of Subsection 108.07 and add the following paragraph:

The daily charge of eight hundred and thirty dollars (\$830.00) will be made for each calendar day after the expiration of contract time. Daily charges will not be made during any required waiting period for placement of permanent pavement markings as set forth in 618.03 provided all other work is complete and during specified growth and coverage of the vegetative items as provided in 210.01.

**55 - Year Weather Study**

Summary of Weather Data from Keesler AFB ( Jun 1942 - Jun 1993 and Jan 1995 - Dec 1997)

Weather Data for July 1993 - Dec. 1994 was not available for weather study

Hours Summarized: 0000 - 2300

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec.	Annually	YOR
Days with Precip > 0.5 inches	3	3	4	3	3	3	4	4	4	1	2	3	37	55
Days with Thunderstorms	2	3	5	4	7	10	16	14	7	2	2	2	74	55

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**SPECIAL PROVISION NO. 907-109-4**

**CODE: (SP)**

**DATE: 06/30/2023**

**SECTION 109 – MEASUREMENT AND PAYMENT**

**SUBJECT: 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) Miscellaneous.

**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 Owner. 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 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 Contract 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 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.**

Delete Subsection 109.06.2 in toto and insert the following:

No advance payments will be made on this project.

**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)”.

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**SPECIAL PROVISION NO. 907-201-1**

**CODE: (SP)**

**DATE: 06/30/2023**

**SECTION 201 - CLEARING AND GRUBBING**

**Subsection 201.03.1.1 - General**

Add the following sentence at the end of the first paragraph:

The Contractor shall coordinate with the Engineer or his authorized representative prior to commencement of any tree removal.

**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 project limits at a site approved by the Engineer or his authorized representative.

**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 be 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 be measured for payment.

**Subsection 201.05.2 - Area Basis**

Delete Subsection 201.05.2 in toto and insert the following paragraph:

SPECIAL PROVISION 907-201-1 (Continued)

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The work under this item, measured as prescribed above, will be paid for at the contract unit price per lump sum, 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-A001: Clearing and Grubbing - lump sum



**DATE: 06/30/2023**

**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 Engineer or his authorized representative. Saw cutting is to be performed along lines set and laid out by the Contractor. The Engineer or his authorized representative may eliminate the need for a particular saw cut by requiring 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 Engineer or his authorized representative to cut the existing asphalt surface. Areas where cutting is necessary will be decided in the field by the Engineer or his authorized representative. Cutting is to be performed along lines set and laid out by the Contractor.

**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 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 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 of over 8 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 pavement, concrete pavement, and concrete pavement overlaid with asphalt pavement will be measured by the square yard for all thicknesses.

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 –per lump sum," 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.

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-A001 shall be paid for at the contract unit price, which shall be full compensation for completing the work.

SPECIAL PROVISION 907-202-1 (Continued)

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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 and concrete pavement, sidewalks, curbs, etc.

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

907-202-A001: Removal of Obstructions	-per lump sum
907-202-B051: Removal of Concrete Curb, All Types	-per linear foot
907-202-B080: Removal of Concrete Sidewalk	-per square yard
907-202-B188: Removal of Pavement, All Types	-per square yard
907-202-B191: Removal of Pipe (8" and Above)	-per linear foot
907-202-E001: Saw Cutting of Asphalt & Concrete Surfaces (All Depths)	-per linear foot

**DATE: 06/30/2023**

**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 D1557, 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-EX012: Borrow Excavation (AH)(FME)(Class B3) | - per cubic yard |
| 907-203-EX014: Borrow Excavation (AH)(FME)(Class B5) | - per cubic yard |

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**SPECIAL PROVISION NO. 907-206-1**

**CODE: (SP)**

**DATE: 06/30/2023**

**SECTION 206 - STRUCTURE EXCAVATION FOR CONDUITS AND MINOR  
STRUCTURES**

Delete Section 206 in its entirety.

**DATE: 06/30/2023**

**SECTION 216 – SOLID SODDING**

**Subsection 216.02 – Materials**

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

Sod shall be the type of grass specified. 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 216.03.3 – Ground Preparation and Fertilization**

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

After the area has been graded as required, the Contractor shall incorporate bag fertilizer at a rate of (21) pounds per (100) Square Yards of 13-13-13 commercial fertilizer and shall be uniformly spread and incorporated in accordance with Section 212 for standard ground preparation.

**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.



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**SPECIAL PROVISION NO. 907-227-1**

**CODE: (SP)**

**DATE: 08/15/2023**

**SECTION 227 - HYDROSEEDING**

**Subsection 227.03.3.1 - General**

Delete the first and second paragraphs of Subsection 227.03.3.1 and insert the following:

The Contractor shall use centipede grass seed with a ninety-three percent (93%) by weight of pure live seed and apply at a rate of fifteen (15) pounds per acre.

**Subsection 227.04 - Method of Measurement.**

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

**Subsection 227.05 - 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 hydroseeding from “acre” to “square yard”.

DATE: 06/30/2023

**SECTION 304 - GRANULAR COURSES**

**Subsection 304.02.3 – Stabilizer Aggregate**

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

**Subsection 304.02.3 – Stabilizer Aggregate.** 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 Engineer or his authorized representative.

**Subsection 304.02.4 - “610” Limestone.** 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)	
<u>Square Mesh Sieves</u>	<u>Specification</u>
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 subplot. The individual tests shall equal or exceed 95% density in accordance with ASTM D 1557.

## GRANULAR COURSES (Continued)

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### **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” at the end of the other pay items, add the following pay item numbers:

907-304-I001: Size II Stabilizer Aggregate (Gravel)(FM)	- per cubic yard
907-304-J001: “610” Limestone (FM)	- per cubic yard

**DATE: 06/30/2023**

**SECTION 321 - IN-GRADE PREPARATION**

**Subsection 321.03.1 – General**

Add the following after the last paragraph:

After tree removal, stripping should be performed to a sufficient depth along the proposed roadway to remove all organic-laden surficial soils, vegetation, debris, and brush. Excavation should then be conducted to remove any weak materials that may develop during construction at the direction of the Engineer or authorized representative. The soils exposed after stripping and excavation to achieve planned subgrade elevation should be scarified to a minimum depth of 12 inches and compacted in accordance with Subsection 321.03.6 with stability present. In addition, the exposed soils shall be proof rolled with a loaded dump truck to demonstrate stability.

Undercut, when required at the direction of the Engineer or authorized representative, shall consist of the placement of Type VI woven geotextile fabric and Class B3 material at an 18" thickness. An increase in the thickness of the Class B3 material may be determined by the Engineer or authorized representative in extreme conditions. The Class B3 material shall be dumped onto the geotextile fabric and spread forward and compacted with repeated passes of a small dozer. Construction trucks and equipment shall not be allowed on the geotextile fabric or Class B3 material until stability is achieved.

It should be noted that soils exposed after stripping and excavation are susceptible to pumping under wet conditions. The construction techniques and types of equipment utilized, and site drainage provided during construction will have a great effect on the performance of these soils. Bleeder ditches could be utilized to improve subgrade moisture conditions along the roadway alignment. The routing of heavy rubber-tired equipment should be controlled to minimize, as much as possible, traffic over the site. Rutting produced by rubber-tired equipment shall be minimized. All traffic shall be discouraged during periods of inclement weather.

After undercutting, scarification, and compaction and/or proof rolling have been performed, Class B5 fill material can be placed to achieve planned subgrade elevations. The fill material shall be spread in loose lifts having a maximum thickness of 9" and compacted in accordance with Subsection 321.03.6 at moisture contents within 3 percentage points of the optimum moisture content. Stability must be evident during the compaction of each lift before any subsequent

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lifts of fill material are added. In addition to density requirements, the final layer of fill material should be proof rolled with a loaded dump truck to demonstrate stability after compaction requirements have been achieved.

**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 D1557.

**DATE: 06/30/2023**

**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**

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

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 Engineer or his authorized representative.

Geotextile fabric for wrapping the concrete pipe joints 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 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 Engineer or his authorized representative.
- (c) The 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 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 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 Engineer or his authorized representative.

**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:

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 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 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 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 Engineer or his authorized representative shall be not 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 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 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.

**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:

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 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 Engineer or his authorized representative.

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

"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 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.

**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.

**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, steps, concrete for inverts will not be measured for separate payment. The cost thereof shall be absorbed in the unit prices bid for other items.

**DATE: 06/30/2023**

**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" (3500 psi) and meet the requirements of Section 804.

Delete the fourth paragraph of Subsection 608.02 on page 414 and substitute the following:

Detectable warning panels for Americans with Disabilities Act (ADA) compliance shall meet the requirements of the plans, standard specifications, contract documents, and AASHTO M 333. The panels shall be precast, modular, or prefabricated.

**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 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 608.04 – Method of Measurement**

Delete the first paragraph of Subsection 608.04 and substitute the following:

Concrete sidewalks of the type specified will be measured for payment by the square yard. Transition slopes, turning space, and ramps necessary for detectable warning panels will be measured as concrete sidewalk.

**Subsection 608.05 - Basis of Payment**

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

Concrete sidewalks (including decorative sidewalks, 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.

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

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

907-608-C: Detectable Warning Panels - per square foot

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**SPECIAL PROVISION NO. 907-609-1**

**CODE: (SP)**

**DATE: 06/30/2023**

**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" (3500 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 609.03.2.6 - 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 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.

SPECIAL PROVISION 907-609-1 (Continued)

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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.



**DATE: 06/30/2023**

**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, a rubber composite adjustment riser such as Infra-Riser, or approved equal shall be used.

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 Engineer or his authorized representative. If existing conditions are discovered during construction that will create an unsafe condition, in the opinion of the Engineer, if adjusted in a standard industry fashion, then an alternate modification shall be required.

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.

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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:

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

**DATE: 06/30/23**

**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" (3500 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 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 Owner. 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 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 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, 6" Thickness) - per square yard

907-614-B: Concrete Driveway (With Reinforcement , 6" Thickness) - per square yard

**SPECIAL PROVISION NO. 907-616-2**

**CODE: (SP)**

**DATE: 06/30/2023**

**SUBJECT: Colored and Imprinted Concrete Median and Island Pavement**

**PROJECT: MGCCC Harrison County Access Road Phase I**

Section 616, Median and Island Pavement, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as amended by this special provision is applicable to Colored And Imprinted Concrete only.

**907-616.01--Description.** This work consists of furnishing all labor, materials, tools, tests, royalties, services and other incidentals as may be required for the good and proper completion of the colored and imprinted concrete island and median pavement.

The locations for colored and imprinted concrete island and median pavement are shown on the plans, but generally are limited to all proposed concrete islands and concrete median end noses.

The Contractor is advised of additional notes on the plans which call attention to particular requirements or conditions regarding colored and imprinted concrete island and median pavement.

**Quality Assurance.** Installation shall be performed by an installer with at least one year experience in the placement of colored and imprinted concrete paving systems.

**907-616.02--Materials.** Colored concrete materials and imprinting tool release agents shall meet the following requirements.

- A. Coloring Agents: Contractor may elect to color the concrete integrally, or may apply dry-shake to the surface of the freshly poured concrete. Whichever method is used, the coloring agent shall be a mineral oxide pigment color Red Mountain as produced by Alabama Pigments Company or approved equal by the Engineer.

Colors for colored and imprinted concrete shall be selected by the Engineer from Standard or Designer color charts, or an approved manufacturer's color charts.

- B. Curing and Finishing Material: Contractor shall utilize a color-matched curing and finishing material recommended by the manufacturer. Curing materials or methods for uncolored concrete shall not be used with Colored and Imprinted Concrete.
- C. Release Agent: Contractor shall utilize a dry-shake powder to facilitate the release of the concrete imprinting tools. The color of the release agent shall match the selected main coloring agent chosen by the Engineer for the concrete.
- D. Imprinting Tools: Tools shall be of high quality and shall provide uniform control of joint depth.

- E. Imprint Tool Pattern: The imprint pattern to be used for all concrete imprinting shall be a 4" x 8" brick herringbone pattern, with a 4" x 8" matching soldier course border used along the perimeter of all proposed concrete islands and median end noses. The Contractor shall reference the plans for pattern layout and orientation of the imprint patterns.

Once the color, method of coloring, and the imprinting tools have received approval from the Engineer, the Contractor shall provide a 4-foot square test panel, separate from proposed island and median end nose areas, to be reviewed and approved by the Engineer. Engineer will evaluate color as compared to color chart and texture of broom finish.

Subsequent test panels may be required, if the finish, imprint quality, or color is unacceptable to the Engineer. The Contractor shall remove unaccepted test panels immediately from site. Accepted panel shall remain until all colored concrete islands and median end noses have been completed by the Contractor, at which time the Contractor shall then remove the acceptable test panel from the site.

**907-616.03.4--Handling, Measuring, Proportioning, and Mixing Materials.** Should an integral coloring method be selected by the Contractor, the Contractor shall mix coloring agent in strict accordance with the approved manufacturer's written instructions. Copies of the manufacturer's written instructions shall be furnished to the Engineer prior to manufacture and placement of colored concrete.

Should a dry-shake applied coloring method be selected by the Contractor, the Contractor shall measure and apply coloring agent in strict accordance with the approved manufacturer's written instructions. Copies of the manufacturer's written instructions shall be furnished to the Engineer prior to manufacture and placement of colored concrete.

**907-616.03.4--Protection and Curing.** Protection and curing materials and methods of application for colored and imprinted concrete shall be in strict accordance with the approved manufacturer's written instructions. Copies of the manufacturer's written instructions shall be furnished to the Engineer prior to manufacture and placement of colored concrete.

**907-616.04--Method of Measurement.** Colored and imprinted concrete median and island pavement, completed and accepted, will be measured by the square foot or square yard. Test panels will not be measured for separate payment.

**907-616.05--Basis of Payment.** Colored and imprinted concrete median and island pavement, measured as prescribed above, will be paid for at the contract unit price per square foot or square yard, which price shall be full compensation for all labor, tools, materials, equipment, test panels, placement of concrete, imprinting the concrete, and all incidental necessary to complete the work.

Payment will be made under:

- |  |                   |
|--|-------------------|
| 907-616-C003: Colored and Imprinted Concrete Median and<br>Island Pavement, <u>4" Thickness</u>  | - per square foot |
| 907-616-C004: Colored and Imprinted Concrete Median and<br>Island Pavement, <u>10" Thickness</u> | - per square foot |

**DATE: 06/30/23**

**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 in existing roadway 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 existing 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.

Traffic flow shall always be maintained on the existing roadway. Specific attention shall be given to business establishments and residents adjacent to this project. The Contractor shall always maintain access to these establishments after trench excavations are closed by providing ample and sufficient aggregate in 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 and residents during the duration of the work.

**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 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.

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**SPECIAL PROVISION NO. 907-627-1**

**CODE: (IS)**

**DATE: 06/30/2023**

**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 Engineer or his Authorized Representative.

**DATE: 06/30/2023**

**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 in 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 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, Mueller 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 1/4 inch drop lid.

The extension stem assembly shall be of a telescoping design that allows for lengths of between 3 feet and 10 1/2 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 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 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 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 Engineer or his Authorized Representative, the Contractor shall immediately alert the 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 Engineer and his Authorized representative will work with the 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  $\frac{5}{8}$  inch x  $\frac{3}{4}$  inch Sensus SR11 Low Lead Water Meter (PD 320). Water meters  $1\frac{1}{2}$  inch – 2 inch in size shall be Sensus Omni-R<sup>2</sup> (SP-W-OMR-00-0611-01-A) and water meters over 2 inches shall be Sensus Omni C<sup>2</sup> (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 3/4” 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 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 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 Engineer or his authorized representative shall not 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 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 Engineer or his authorized representative. Additional lines shall be installed for future use as directed by

the 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 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 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 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 Engineer or his authorized representative in non-paved areas.

The 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 on 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 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 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 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 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 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 Owner.

**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 Engineer 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 15 minutes 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 and relocated fire hydrants will be measured per fire hydrant assembly. The fire hydrant assembly and relocated 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 not be measured as part of the assembly.

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 Engineer or his authorized representative, will be measured by volume in cubic yards in accordance with 907-304-1.

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

SPECIAL PROVISION NO. 907-644-1 (Continued)

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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

SPECIAL PROVISION NO. 907-644-1 (Continued)

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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 Assembly	-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

**DATE: 06/30/2023**

**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 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 Engineer or his authorized representative.

The Engineer or his authorized representative reserves the right to request additional testing 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 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 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.

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If the 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.

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**SPECIAL PROVISION NO. 907-708-1**

**CODE: (SP)**

**DATE: 06/30/2023**

**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.

## MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-809-10

CODE: (SP)

DATE: 05/02/2023

SUBJECT: Retaining Wall Systems

Section 809, Retaining Wall Systems, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

**907-809—Retaining Wall Systems**. Delete the entire sections on pages 1009 thru 1021 and substitute the following.

### PRECAST MODULAR BLOCK RETAINING WALL

#### PART 1 – GENERAL

##### 1.01 SUMMARY

- A. This Section includes furnishing all materials and labor required for the construction of a precast concrete modular block (PMB) retaining wall with geosynthetic reinforcement. Precast modular block retaining wall blocks under this section shall be cast utilizing a wet-cast concrete mix and exhibit a final handling weight in excess of 1,000 pounds (450 kg) per unit.
- B. Scope of Work: The work shall consist of furnishing shop drawings, materials, labor, equipment and supervision for the construction of a precast modular block (PMB) retaining wall structure in accordance with the requirements of this section and in acceptable conformity with the lines, grades, design and dimensions shown in the project site plans.
- C. Drawings and General Provisions of the Contract apply to this Section.

##### 1.02 PRICE AND PAYMENT PROCEDURES

- A. Allowances. No allowance shall be made in the price of the retaining wall for excavation beyond the limits required for retaining wall construction and foundation preparation as shown on the project plans. The cost of excavation for the purposes of site access shall be the responsibility of the General Contractor. Removal of unsuitable foundation soils and replacement with compacted granular backfill shall be as directed on the construction drawings and these specifications. Any additional excavation of foundation soils shall be as directed by the Owner's Representative and shall be paid under a separate pay item.
- B. Unit Prices. In addition to the scope of work described in Part 1.01 of this Section, the General Contractor shall provide a unit price per square foot of vertical wall face that shall be the basis of compensation for the overall scope of the retaining wall work.



C. Measurement and Payment.

1. The unit of measurement for furnishing the PMB retaining wall system shall be the vertical area of the wall face surface as measured from the top of the leveling pad to the top of the PMB but excluding coping. The final measured quantity shall include the materials and construction of the geogrid reinforced PMB retaining wall system, all excavation, reinforced fill, retained fill, leveling pad, all materials for the wall drainage system, facing material, soil reinforcement, equipment, labor, and incidentals necessary to complete the work. Any required undercut and backfill will be paid for separately as Excess Excavation and Borrow Material.
2. The final accepted quantities of the PMB retaining wall system will be compensated per the vertical face area as described above. The quantities of the PMB retaining wall as shown on the plans and as approved by the Owner shall be the basis for determination of the final payment quantity. Payment shall be made per square foot of vertical wall face.

Payment will be made under:

907-809-A004:              Geogrid Reinforced PMB                      Retaining Wall System                      - per square foot

1.03 REFERENCES

- A. Where the specification and reference documents conflict, the Owner's designated representative will make the final determination of the applicable document.

B. Definitions:

1. Precast Modular Block (PMB) Unit – machine-placed, "wet cast" concrete modular block retaining wall facing unit.
2. Geotextile – a geosynthetic fabric manufactured for use as a separation and filtration medium between dissimilar soil materials.
3. Geogrid – a geosynthetic material comprised of a regular network of tensile elements manufactured in a mesh-like configuration of consistent aperture openings. When connected to the PMB facing units and placed in horizontal layers in compacted fill, the geogrid prevents lateral deformation of the retaining wall face and provides effective tensile reinforcement to the contiguous reinforced fill material.
4. Drainage Aggregate – clean, crushed stone placed within and immediately behind the precast modular block units to facilitate drainage and reduce compaction requirements immediately adjacent to and behind the precast modular block units.
5. Unit Core Fill – clean, crushed stone placed within the hollow vertical core of a precast modular block unit. This shall be the same material used for drainage aggregate as defined above.
6. Foundation Zone – soil zone immediately beneath the leveling pad and the reinforced zone.
7. Retained Zone – the soil zone immediately behind the reinforced zone.
8. Reinforced Zone – structural fill zone within which successive horizontal layers of geogrid soil reinforcement have been placed to provide stability for the retaining wall face.
9. Reinforced Fill – structural fill placed within the reinforced zone.
10. Leveling Pad – cast-in-place concrete upon which the bottom course of PMB units are placed.
11. Undercut Zone – Zone below reinforced zone where unsuitable foundation soils are to be removed and replaced with compacted granular backfill.

C. Reference Standards

1. Design

- a. AASHTO LRFD Bridge Design Specifications, 8<sup>th</sup> Edition, 2017.
  - b. Minimum Design Loads for Buildings and Other Structures – ASCE/SEI 7-10.
  - c. International Building Code, 2012 Edition.
  - d. FHWA-NHI-10-024 Volume I and GEC 11 Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes.
  - e. FHWA-NHI-10-025 Volume II and GEC 11 Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes.
2. Precast Modular Block Units
- a. ACI 201 – Guide to Durable Concrete
  - b. ACI 318 – Building Code Requirements for Structural Concrete
  - c. ASTM C33 – Standard Specification for Concrete Aggregates
  - d. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
  - e. ASTM C94 – Standard Specification for Ready-Mixed Concrete.
  - f. ASTM C136 – Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  - g. ASTM C143 – Standard Test Method for Slump of Hydraulic-Cement Concrete.
  - h. ASTM C150 – Standard Specification for Portland Cement
  - i. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
  - j. ASTM C260 – Standard Specification for Air-Entraining Admixtures for Concrete.
  - k. ASTM C494 – Standard Specification for Chemical Admixtures for Concrete.
  - l. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
  - m. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
  - n. ASTM C666 – Standard Test Method for Concrete Resistance to Rapid Freezing and Thawing.
  - o. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
  - p. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.
  - q. ASTM C989 - Standard Specification for Slag Cement for Use in Concrete and Mortars.
  - r. ASTM C1116 – Standard Specification for Fiber-Reinforced Concrete.
  - s. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
  - t. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
  - u. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
  - v. ASTM C1611 – Standard Test Method for Slump Flow of Self-Consolidating Concrete.
  - w. ASTM C1776 – Standard Specification for Wet-Cast Precast Modular Retaining Wall Units.
  - x. ASTM D6638 – Standard Test Method for Determining Connection Strength Between Geosynthetic Reinforcement and Segmental Concrete Units (Modular Concrete Blocks).
  - y. ASTM D6916 – Standard Test Method for Determining Shear Strength Between Segmental Concrete Units (Modular Concrete Blocks).
3. Geosynthetics
- a. AASHTO M 288 – Geotextile Specification for Highway Applications.
  - b. ASTM D3786 – Standard Test Method for Bursting Strength of Textile Fabrics Diaphragm Bursting Strength Tester Method.
  - c. ASTM D4354 – Standard Practice for Sampling of Geosynthetics for Testing.
  - d. ASTM D4355 – Standard Test Method for Deterioration of Geotextiles
  - e. ASTM D4491 – Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
  - f. ASTM D4533 – Standard Test Method for Trapezoid Tearing Strength of Geotextiles.

- g. ASTM D4595 – Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
  - h. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
  - i. ASTM D4751 – Standard Test Method for Determining Apparent Opening Size of a Geotextile.
  - j. ASTM D4759 – Standard Practice for Determining Specification Conformance of Geosynthetics.
  - k. ASTM D4833 – Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.
  - l. ASTM D4873 – Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples.
  - m. ASTM D5262 – Standard Test Method for Evaluating the Unconfined Tension Creep and Creep Rupture Behavior of Geosynthetics.
  - n. ASTM D5321 – Standard Test Method for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method.
  - o. ASTM D5818 – Standard Practice for Exposure and Retrieval of Samples to Evaluate Installation Damage of Geosynthetics.
  - p. ASTM D6241 – Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe.
  - q. ASTM D6637 – Standard Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-Rib Tensile Method.
  - r. ASTM D6706 – Standard Test Method for Measuring Geosynthetic Pullout Resistance in Soil.
  - s. ASTM D6992 – Standard Test Method for Accelerated Tensile Creep and Creep-Rupture of Geosynthetic Materials Based on Time-Temperature Superposition Using the Stepped Isothermal Method.
4. Soils
- a. AASHTO M 145 – AASHTO Soil Classification System.
  - b. AASHTO T 104 – Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
  - c. AASHTO T 267 – Standard Method of Test for Determination of Organic Content in Soils by Loss of Ignition.
  - d. ASTM C33 – Standard Specification for Concrete Aggregates.
  - e. ASTM D422 – Standard Test Method for Particle-Size Analysis of Soils.
  - f. ASTM D448 – Standard Classification for Sizes of Aggregates for Road and Bridge Construction.
  - g. ASTM D698 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. (12,400 ft-lbf/ft (2,700 kN-m/m)).
  - h. ASTM D1241 – Standard Specification for Materials for Soil-Aggregate Subbase, Base and Surface Courses.
  - i. ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.
  - j. ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort. (56,000 ft-lbf/ft (2,700 kN-m/m)).
  - k. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
  - l. ASTM D2488 – Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

- m. ASTM D3080 – Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions.
  - n. ASTM D4254 – Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
  - o. ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
  - p. ASTM D4767- Test Method for Consolidated-Undrained Triaxial Compression Test for Cohesive Soils.
  - q. ASTM D4972 – Standard Test Method for pH of Soils.
  - r. ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Aggregate by Nuclear Methods (Shallow Depth).
  - s. ASTM G51 – Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing.
  - t. ASTM G57 – Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method.
5. Drainage Pipe
- a. ASTM D3034 – Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
  - b. ASTM F2648 – Standard Specification for 2 to 60 inch [50 to 1500 mm] Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications.

#### 1.04 ADMINISTRATIVE REQUIREMENTS

A. Preconstruction Meeting. As directed by the Owner, the General Contractor shall schedule a preconstruction meeting at the project site prior to commencement of retaining wall construction and subsequent to review and approval of the Retaining Wall Installation Contractor's submittals by the Owner's Representative as specified in Section 1.05. Participation in the preconstruction meeting shall be required of the General Contractor, Owner's Representative, Retaining Wall Design Engineer, Retaining Wall Installation Contractor, Geotechnical Engineer and the Owner's Inspection Engineer. The General Contractor shall provide notification to all parties at least 10 calendar days prior to the meeting.

##### 1. Preconstruction Meeting Agenda:

- a. The Retaining Wall Installation Contractor shall explain all sequencing, staging, and construction procedures/operations for the geogrid reinforced PMB retaining wall.
- b. The Retaining Wall Installation Contractor shall explain all excavation needs, site access and material staging area requirements to the General Contractor .
- c. The Retaining Wall Installation Contractor shall explain any measures required for coordination of the installation of utilities or other obstructions in the reinforced or retained fill zones of the retaining wall.

#### 1.05 SUBMITTALS

A. Product Data. At least 14 days prior to construction, the General Contractor shall provide an electronic portable document file of the retaining wall product submittal package to the Owner's Representative for review and approval. The submittal package shall include technical specifications and product data from the manufacturer for the following:

1. Precast Modular Block System brochure. The Highway Innovative Technology Evaluation Center (HITEC) evaluation shall be provided, if available.
  2. Precast Modular Block concrete test results specified in paragraph 2.01, subparagraph B of this section as follows:
    - a. 28-day compressive strength
    - b. Air content
    - c. Slump or Slump Flow (as applicable)
  3. Drainage Pipe
  4. Geotextile
  5. Geogrid. The contractor shall provide certified manufacturer test reports for the geogrid material(s) in the manufactured roll width specified. The test report shall list the individual roll numbers for which the certified material properties are valid.
  6. Reinforced Fill. The Contractor shall provide the reinforced fill borrow source and geotechnical laboratory test results including, but not limited to, sieve analyses (ASTM D 422), AASHTO T88, standard Proctor (ASTM D 698) and sand triaxial (USACE).
- B. Retaining Wall Installation Contractor Qualification Data. At least 14 days prior to construction, the General Contractor shall submit the qualifications of the business entity responsible for construction of the PMB units, and the Retaining Wall Installation Contractor, per paragraph 1.07, subparagraph A of this section.
- C. Retaining Wall Construction Shop Drawings. At least 14 days prior to construction, the General Contractor shall furnish an electronic portable document file of construction shop drawings to the Owner's Representative for review and approval. This submittal shall include the following:
1. Dated drawings prepared in accordance with these construction plans and specifications to include all plans, profiles, sections and details for construction.
  2. Qualifications Statement of Experience of the Retaining Wall Installation Contractor as specified in paragraph 1.07, subparagraph B of this section.
  3. Certificate of Insurance of the Retaining Wall Installation Contractor as specified in paragraph 1.06, subparagraph B of this section.

#### 1.06 CONSTRUCTION SHOP DRAWING PREPARATION

- A. The Retaining Wall Installation Contractor shall coordinate the retaining wall construction shop drawing preparation with the Owner's Representative and the Retaining Wall Inspector.

#### 1.07 QUALITY ASSURANCE

- A. Retaining Wall Installation Contractor Qualifications. In order to demonstrate basic competence in the construction of precast modular block walls, the Retaining Wall Installation Contractor shall document compliance with the following:
1. Experience.
    - a. Construction experience with a minimum of 15,000 square feet (1,400 square meters) of the proposed precast modular block retaining wall system.
    - b. Construction of at least five (5) precast modular block retaining wall structures within the past three (3) years.

- c. Construction of at least 25,000 square feet (2,330 square meters) of precast modular block retaining walls within the past three (3) years.
- 2. Retaining Wall Installation Contractor experience documentation for each qualifying project shall include:
  - a. Project name and location
  - b. Date (month and year) of construction completion
  - c. Contact information of Owner or General Contractor
  - d. Type (trade name) of precast modular block system built
  - e. Maximum height of the wall constructed
  - f. Face area of the wall constructed

#### 1.08 QUALITY CONTROL

- A. The Owner's Representative shall review all submittals for materials, the Retaining Wall Installation Contractor qualifications, and the Retaining Wall Construction Shop Drawings.
- B. The Owner shall retain the services of an Inspection Engineer who is experienced with the construction of precast modular block retaining wall structures to perform Quality Control inspection and testing. The cost of inspection shall be the responsibility of the Owner. Inspection shall be continuous throughout the construction of the retaining walls.
- C. The Inspection Engineer shall perform the following duties:
  - 1. Inspect the construction of the precast modular block structure for conformance with construction shop drawings and the requirements of this specification.
  - 2. Verify that soil or aggregate fill placed and compacted in the reinforced, retained and foundation zones of the retaining wall conforms with paragraphs 2.04 and 2.05 of this section .
  - 3. Verify that the shear strength of the in-situ foundation soils and notify Retaining Wall Design Engineer and Geotechnical Engineer of any suspected deficiencies.
  - 4. Inspect and document soil compaction in accordance with these specifications:
  - 5. Notify the General Contractor, the Owner's Representative and the Retaining Wall Installation Contractor of any deficiencies in the retaining wall construction and provide the Retaining Wall Installation Contractor a reasonable opportunity to correct the deficiency.
  - 6. Notify the General Contractor, Owner and Retaining Wall Design Engineer of any construction deficiencies that have not been corrected timely.
  - 7. Document all inspection results.
  - 8. Test compacted density and moisture content of the retained backfill with the following frequency:
    - a. At least once every 1,000 square feet (90 square meters) (in plan) per 9-inch (230 mm) vertical lift, and
    - b. At least once per every 9 inches (460 mm) of vertical wall construction per day.
- D. The Owner's engagement of the Inspection Engineer does not relieve the Retaining Wall Installation Contractor of responsibility to construct the proposed retaining wall in accordance with the approved construction shop drawings, these specifications and construction plans.
- E. The Owner's Representative, the General Contractor, the Inspection Engineer and the Retaining Wall Installation Contractor shall inspect the on-site grades and excavations prior to construction for conformance with the retaining wall construction shop drawings.

#### 1.09 DELIVERY, STORAGE AND HANDLING

- A. The Retaining Wall Installation Contractor shall inspect the materials upon delivery to ensure that the proper type, grade, and color of materials have been delivered.
- B. The Retaining Wall Installation Contractor shall store and handle all materials in accordance with the manufacturer's recommendations as specified herein and in a manner that prevents deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping, UV exposure or other causes. Damaged materials shall not be incorporated into the work.
- C. Geosynthetics
  - 1. All geosynthetic materials shall be handled in accordance with ASTM D4873. The materials should be stored off the ground and protected from precipitation, sunlight, dirt and physical damage.
- D. Precast Modular Blocks
  - 1. Precast modular blocks shall be stored in an area with positive drainage away from the blocks. The blocks shall be protected from mud and excessive chipping and breakage. Precast modular blocks shall not be stacked more than three (3) units high in the storage area.
- E. Drainage Aggregate and Backfill Stockpiles
  - 1. Drainage aggregate or backfill material shall not be piled over unstable slopes or areas of the project site with buried utilities, unless specifically identified for burial on the shop drawings.
  - 2. Drainage aggregate and/or reinforced fill material shall not be staged where it may become mixed with or contaminated by poor draining fine-grained soils such as clay or silt.

## **PART 2 – MATERIALS**

### **2.01 PRECAST MODULAR BLOCK RETAINING WALL UNITS**

- A. All units shall be wet-cast precast modular retaining wall units conforming to ASTM C1776. The wall shall be fabricated from Redi-Rock block units 28" (710 mm) PC Middle (R-218 PCM) and 28" (710 mm) PC Top (R-28 PCT).
- B. All units for the project shall be obtained from the same manufacturer. The manufacturer shall be licensed and authorized to produce the retaining wall units by the precast modular block system patent holder/licensor and shall document compliance with the published quality control standards of the proprietary precast modular block system licensor for the previous three (3) years or the total time the manufacturer has been licensed, whichever is less.
- C. Concrete used in the production of the precast modular block units shall be first-purpose, fresh concrete. It shall not consist of returned, reconstituted, surplus or waste concrete. It shall be an original production mix meeting the requirements of ASTM C94 and exhibit the properties as shown in the following table:

### Concrete Mix Properties

Freeze Thaw Exposure Class <sup>(1)</sup>	Minimum 28-Day Compressive Strength <sup>(2)</sup>	Maximum Water Cement Ratio	Nominal Maximum Aggregate Size	Aggregate Class Designation <sup>(3)</sup>	Air Content <sup>(4)</sup>
Moderate	4,000 psi (27.6 MPa)	0.45	1 inch (25 mm)	3M	4.5% +/- 1.5%
Severe	4,000 psi (27.6 MPa)	0.45	1 inch (25 mm)	3S	6.0% +/- 1.5%
Very Severe	4,500 psi (30.0 MPa)	0.40	1 inch (25 mm)	4S	6.0% +/- 1.5%
Maximum Water-Soluble Chloride Ion (Cl <sup>-</sup> ) Content in Concrete, Percent by Weight of Cement <sup>(6,8)</sup>					0.15
Maximum Chloride as Cl <sup>-</sup> Concentration in Mixing Water, Parts Per Million					1000
Maximum Percentage of Total Cementitious Materials By Weight <sup>(7,9)</sup> (Very Severe Exposure Class Only):					
Fly Ash or Other Pozzolans Conforming to ASTM C618					25
Slag Conforming to ASTM C989					50
Silica Fume Conforming to ASTM C1240					10
Total of Fly Ash or Other Pozzolans, Slag, and Silica Fume <sup>(8)</sup>					50
Total of Fly Ash or Other Pozzolans and Silica Fume <sup>(8)</sup>					35
Alkali-Aggregate Reactivity Mitigation per ACI 201					
Slump (Conventional Concrete) per ASTM C143 <sup>(10)</sup>			5 inches +/- 1½ inches (125 mm +/- 40 mm)		
Slump Flow (Self-Consolidating Concrete) per ASTM C1611			18 inches – 32 inches (450 mm – 800 mm)		

<sup>(1)</sup>Exposure class is as described in ACI 318. "Moderate" describes concrete that is exposed to freezing and thawing cycles and occasional exposure to moisture. "Severe" describes concrete that is exposed to freezing and thawing cycles and in continuous contact with moisture. "Very Severe" describes concrete that is exposed to freezing and thawing cycles and in continuous contact with moisture and exposed to deicing chemicals. Exposure class should be specified by owner/purchaser prior to order placement.

<sup>(2)</sup>Test method ASTM C39.

<sup>(3)</sup>Defined in ASTM C33 Table 3 *Limits for Deleterious Substances and Physical Property Requirements of Coarse Aggregates for Concrete*.

<sup>(4)</sup>Test method ASTM C231.

<sup>(5)</sup>Test method ASTM C1218 at age between 28 and 42 days.

<sup>(6)</sup>Where used in high sulfate environments or where alkali-silica reactivity is an issue, water soluble chloride shall be limited to no more than trace amounts (from impurities in concrete-making components, not intended constituents.)

<sup>(7)</sup>The total cementitious material also includes ASTM C150, C595, C845, C1157 cement. The maximum percentages shall include:

- (a) Fly ash or other pozzolans in type IP, blended cement, ASTM C595, or ASTM C1157.
- (b) Slag used in the manufacture of an IS blended cement, ASTM C595, or ASTM C1157.
- (c) Silica fume, ASTM C1240, present in a blended cement.

<sup>(8)</sup>Fly ash or other pozzolans and silica fume shall constitute no more than 25 and 10 percent, respectively, of the total weight of the cementitious materials.

<sup>(9)</sup>Prescriptive limits shown may be waived for concrete mixes that demonstrate excellent freeze/thaw durability in a detailed and current testing program.

<sup>(10)</sup>Slump may be increased by a high-range water-reducing admixture.

D. Each concrete block shall be cast in a single continuous pour without cold joints. With the exception of half-block units, corner units and other special application units, the precast modular block units shall conform to the nominal dimensions listed in the table below and be produced to the dimensional tolerances shown.



Block Type	Dimension	Nominal Value	Tolerance
28" (710 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	28" (710 mm)	+/- 1/2" (13 mm)

\* Block tolerance measurements shall exclude variable face texture

- E. Individual block units shall have a nominal height of 18 inches (457 mm).
- F. With the exception of half-block units, corner units and other special application units, the precast modular block units shall have two (2), circular dome shear knobs that are 10 inches (254 mm), in diameter and 4 inches (102 mm) in projection height. The shear knobs shall fully index into a continuous semi-cylindrical shear channel in the bottom of the block course above. The Peak interlock shear between any two (2) vertically stacked precast modular block units, with 10-inch (254 mm) diameter shear knobs, measured in accordance with ASTM D6916 shall exceed 6,500 lb/ft (95 kN/m) at a minimum normal load of 500 lb/ft (7kN/m), as well as an ultimate peak interface shear capacity in excess of 11,000 lb/ft (160 kN/m). Test specimen blocks tested under ASTM D6916 shall be actual, full-scale production blocks of known compressive strength. The interface shear capacity reported shall be corrected for a 4,000 psi (27.6 MPa) concrete compressive strength. Regardless of precast modular block configuration, interface shear testing shall be completed without the inclusion of unit core infill aggregate.
- G. The 28" (710 mm) precast modular block units shall be cast with a 13" (330 mm) wide, continuous vertical core slot that will permit the insertion of a 12" (305 mm) inch wide strip of geogrid reinforcement to pass completely through the block. When installed in this manner, the geogrid reinforcement shall form a non-normal load dependent, positive connection between the block unit and the reinforcement strip. The use of steel for the purposes of creating the geogrid to block connection is not acceptable.
- H. Without field cutting or special modification, the precast modular block units shall be capable of achieving a minimum radius of 14 ft 6 in (4.42 m).
- I. The precast modular block units shall be manufactured with an integrally cast shear knobs that establishes a standard horizontal set-back for subsequent block courses. The precast modular block system shall be available in the horizontal set-back facing batter listed below:

Horizontal <u>Set-Back/Blk. Course</u>	Max. <u>Facing Batter</u>
0.01"	Vertical

The precast modular block units shall be furnished with the required shear knobs that provide the facing batter required in the construction shop drawings.

- J. The precast modular block unit face texture shall be Limestone. Each textured block facing unit shall be a minimum of 5.76 square feet (0.54 square meters) with a unique texture pattern that repeats with a maximum frequency of once in any 15 square feet (1.4 square meters) of wall face.
- K. The block color shall be "natural concrete gray" in color.
- L. All precast modular block units shall be sound and free of cracks or other defects that would interfere with the proper installation of the unit, impair the strength or performance of the constructed wall. PMB units to be used in exposed wall construction shall not exhibit chips or cracks in the exposed face or faces of the unit that are not otherwise permitted. Chips smaller than 1.5" (38 mm) in its largest dimension and cracks not wider than 0.012" (0.3 mm) and not longer than 25% of the nominal height of the PMB unit shall be permitted. PMB units with bug holes in the exposed architectural face smaller than 0.75" (19 mm) in its largest dimension shall be permitted. Bug holes, water marks, and color variation on non-architectural faces are acceptable. PMB units that exhibit cracks that are continuous through any solid element of the PMB unit shall not be incorporated in the work regardless of the width or length of the crack.

## 2.02 GEOGRID REINFORCEMENT

- A. Geogrid reinforcement shall be a geosynthetic formed by a regular network of integrally connected elements with apertures greater than 0.25 inch to allow interlocking with surrounding soil, rock, earth, and other surrounding materials to function primarily as reinforcement. The geogrid shall be mildew resistant and inert to biological degradation and naturally encountered chemicals, alkalis and acids. The geogrid shall contain stabilizers and/or inhibitors, or a resistance finish or covering to make it resistant to deterioration from direct sunlight, ultraviolet rays, and heat. The geogrid shall be furnished in prefabricated roll widths of certified tensile strength by the manufacturer.
- B. The ultimate tensile strength ( $T_{ult}$ ) of the geogrid reinforcement shall be measured in accordance with ASTM D6637.
- C. Connection between the PMB retaining wall unit and the geogrid reinforcement shall be determined from short-term testing per the requirements of FHWA NHI-10-025, Appendix B.4 for a minimum 75-year design life.
- D. The geogrid used for construction of the reinforced precast modular block retaining wall shall be Miragrid 8XT geogrid reinforcement manufactured by Tencate Mirafi Geosynthetics, Pendergrass, GA. The geogrid reinforcement strip shall be furnished in nominal prefabricated roll widths of 12 ". No field modification of the geogrid roll width shall be permitted. The Miragrid 8XT shall be installed at the schedule indicated on the approved construction shop drawings.

- E. The minimum length of geogrid reinforcement shall be lengths shown on the shop drawings. The minimum cut length (Lc) shall be in accordance with Section 3.04.D.2. The geogrid strip length (Lc) shall be continuous for its entire length. No spliced lengths are permitted.
- F. Constructability Requirements. Geogrid design embedment length shall be measured from the back of the precast modular block facing unit and shall be consistent for the entire height of a given retaining wall section.
- G. Geogrid shall be positively connected to every precast modular block unit, unless specifically designated on the construction and approved shop drawings.

## 2.03 GEOTEXTILE

- A. Woven geotextile fabric shall be placed as indicated on the retaining wall construction shop drawings and on foundation materials in undercut zones. Additionally, the woven geotextile fabric shall be placed in the V-shaped joint between adjacent block units on the same course. The woven geotextile fabric shall be an approved MDOT Type V Woven Geotextile in accordance with MDOT Specifications Section 714. Overlaps for geotextiles on foundation soils in undercut zones shall be 2 ft (min.)

## 2.04 DRAINAGE AGGREGATE

- A. Crushed aggregate shall be a durable crushed limestone conforming to AASHTO No. 57 size per ASTM C33 with the following particle-size distribution requirements per ASTM D422:

U.S. Standard Sieve Size	% Passing
1-½" (38 mm)	100
1" (25 mm)	95-100
½" (13 mm)	25-60
No. 4 (4.76 mm)	0-10
No. 8 (2.38 mm)	0-5

## 2.05 REINFORCED FILL

- A. Select off-site borrow material used as reinforced backfill material in the reinforced zone shall be a fine aggregate concrete sand of the gradation meeting the MDOT Standard Specifications Section 703.02. The backfill shall exhibit a minimum effective internal angle of friction ( $\phi$ ) of 33 degrees at a maximum 2% shear strain and meet the following particle-size distribution.

U.S. Standard Sieve Size	% Passing by Weight
1/2 inch	100
3/8 inch	97 – 100
No. 4	92 – 100
No. 8	75 – 100
No. 16	45 – 90
No. 30	25 – 70
No. 50	3 – 35
No. 100	0 – 10
No. 200	0 – 5

- B. The reinforced fill material shall be free of sod, peat, roots or other organic or deleterious matter including, but not limited to, ice, snow or frozen soils. Materials passing the No. 40 (0.42 mm) sieve shall have a plasticity index less than 6 per ASTM D4318. Organic content in the backfill material shall be less than 1% per AASHTO T-267, and the pH of the backfill material shall be between 5 and 8.
- C. Soundness. The reinforced fill material coarser than No. 4 sieve shall exhibit a magnesium sulfate soundness loss of less than 30% after four (4) cycles, or sodium sulfate soundness loss of less than 15% after five (5) cycles as measured in accordance with AASHTO T-104.
- D. Reinforced fill shall not be comprised of crushed or recycled concrete, recycled asphalt, bottom ash, shale or any other material that may degrade, creep or experience a loss in shear strength or a change in pH over time.
- E. Prior to placement, test reinforced fill as follows:
  - 1. Soil gradation, Atterberg limits sieve analysis and standard Proctor (ASTM D698): minimum sampling and testing frequency of once every 10,000 cubic yards with at least one of each test type completed prior to beginning wall construction. Additional testing frequency shall be directed by the Inspection Engineer due to changes in material consistency or field compaction test testing results.
  - 2. Stockpiled onsite soil shall be evaluated by at least one determination of percent passing No. 200 sieve for every 1,000 cubic yards placed.
  - 3. Friction angle: Minimum sampling and testing frequency of once every 50,000 cubic yards with at least one test completed prior to beginning wall construction.
  - 4. At the discretion of Inspection Engineer or Owner's Representative, variation in testing frequency may be required if a variance in material gradation or composition is suspected.
  - 5. Contractor shall ensure that stockpile contamination does not occur after verification testing has been performed.

## 2.06 RETAINED FILL AND UNDERCUT BACKFILL

- A. Retained fill placed as backfill behind the reinforced fill zones and undercut backfill may be either the same as the reinforced fill or MDOT borrow Class B5 material. The retained fill shall be tested, placed, compacted and meet the compaction requirements of the reinforced fill and undercut fill, if required. The height of the first lift of undercut backfill shall be 18 in. or thinner.

## 2.07 LEVELING PAD

- A. The precast modular block units shall be placed on a leveling pad constructed from concrete. The leveling pad shall be constructed to the dimensions and limits shown on the retaining wall design drawings prepared by the Retaining Wall Design Engineer.
- B. Concrete used for construction of concrete leveling pad shall satisfy the criteria for MDOT Class B concrete (MDOT Standard Specifications, Section 804). The concrete should be cured a minimum of 12 hours prior to placement of the precast modular block wall retaining units and exhibit a minimum compressive strength of 2,000 psi. A minimum 28-day concrete compressive strength of 3,500 psi is required

## 2.08 DRAINAGE

### A. Drainage Pipe

1. Drainage collection pipe shall be a 6-in. (100 mm) diameter, perforated sewer pipe for underdrains, SDR 23.5 meeting MDOT Specifications Sections 605 and 708.18. 6-in. diameter nonperforated pipe for underdrains, SDR 23.5 shall be used to extend the pipe to the nearest roadway curb inlet.
2. All fittings (external joints, end caps, and appurtenances) shall be compatible.

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. All work shall be performed in accordance with OSHA safety standards, state and local building codes and manufacturer's requirements.
- B. The General Contractor is responsible for the geogrid reinforced PMB retaining wall alignment. The Retaining Wall Installation Contractor is responsible for the retaining wall layout in conformance with the shop drawings.
- C. The General Contractor is responsible for the location and protection of all existing underground utilities. Any new utilities proposed for installation in the vicinity of the retaining wall, shall be installed concurrent with retaining wall construction. The General Contractor shall coordinate the work of subcontractors affected by this requirement.
- D. New utilities installed below the retaining wall shall be backfilled and compacted to a minimum of 95% maximum dry density per ASTM D698 standard proctor.
- E. The General Contractor is responsible to ensure that safe excavations and embankments are maintained throughout the course of the project.
- F. All work shall be inspected by the Inspection Engineer as directed by the Owner.

### 3.02 EXAMINATION

- A. Prior to construction, the General Contractor, Owner's Representative, Retaining Wall Installation Contractor, and Inspection Engineer shall examine the areas in which the retaining wall will be constructed to evaluate compliance with the requirements for installation tolerances, worker safety and any site conditions affecting performance of the completed structure. Installation shall proceed only after unsatisfactory conditions have been corrected.

### 3.03 PREPARATION

- A. Fill Soil.

1. The Inspection Engineer shall verify that reinforced backfill placed in the reinforced soil zone satisfies the criteria of this section.
  2. The Inspection Engineer shall verify that any fill soil installed in the foundation, reinforced zones, and retained soil zones of the retaining wall satisfies the specifications as shown on the shop drawings and these specifications.
- B. Excavation.
1. The Grading Contractor shall excavate to the lines and grades required for construction of the PMB retaining wall as shown on the construction shop drawings. Excavation support, if required, shall be the responsibility of the Grading Contractor.
  2. Over-excavated soil shall be replaced with reinforced fill in conformance with these specifications and the construction shop drawings.
  3. Embankment excavations shall be bench cut as directed by the project Geotechnical Engineer and inspected by the Inspection Engineer for compliance.
- C. Foundation Preparation.
1. Prior to construction of the precast modular block retaining wall, the leveling pad area and undercut zone (if required) shall be cleared and grubbed. However, final excavation to wall bearing elevation shall be performed no more than three (3) days prior to construction of the concrete level pad and is confirmed as satisfactory to Inspection Engineer and Owner's Representative. All topsoil, brush, frozen soil and organic material shall be removed. Additional foundation soils found to be unsatisfactory shall be undercut and replaced with reinforced fill as directed by the Owner's Representative. The Inspection Engineer shall ensure that the undercut limits are consistent with the requirements of the Owner's Representative and that all soil fill material is properly compacted according to project specifications. The Inspection Engineer shall document the volume of undercut and replacement.
  2. Following excavation for the leveling pad and undercut zone (if required), the Owner's Representative and the Inspection Engineer shall evaluate the in-situ soil in the foundation, reinforced fill and retained soil zones to verify that the soils exhibit sufficient ultimate bearing capacity to satisfy the requirements indicated on the retaining wall construction shop drawings per paragraph 1.06 of this section.
  3. Undercut zones shall be limited to areas that can be backfilled within 24 hours of the undercut excavation.
  4. An MDOT Type V woven geotextile shall be placed on the surface of undercut areas and before the first lift of undercut backfill.
- D. Leveling Pad.
1. The concrete leveling pad shall be constructed to provide a level, hard surface on which to place the first course of precast modular block units. The concrete leveling pad shall be placed in the dimensions shown on the retaining wall construction drawings and extend to the limits indicated.
  2. Concrete Leveling Pad. The concrete shall be placed to the dimensions indicated on the construction shop drawings. The Retaining Wall Installation Contractor shall erect proper forms as required to ensure the accurate placement of the concrete leveling pad according to the retaining wall construction shop drawings.

### 3.04 PRECAST MODULAR BLOCK WALL SYSTEM INSTALLATION

- A. The precast modular block structure shall be constructed in accordance with the construction shop drawings, these specifications, and the recommendations of the retaining wall system component manufacturers. Where conflicts exist between the manufacturer's recommendations and these specifications, these specifications shall prevail.
- B. Drainage components. Pipe, geotextile and drainage aggregate shall be installed as shown on the approved shop drawings.
- C. Precast Modular Block Installation
  - 1. The first course of block units shall be placed with the front face edges tightly abutted together on the prepared leveling pad at the locations and elevations shown on the construction shop drawings. The Retaining Wall Installation Contractor shall take special care to ensure that the bottom course of block units is in full contact with the leveling pad, is set level and true and is properly aligned according to the locations shown on the approved shop drawings.
  - 2. Backfill shall be placed in front of the bottom course of blocks prior to placement of subsequent block courses. Geotextile fabric shall be placed in the V-shaped joints between adjacent blocks. Drainage aggregate shall be placed in the V-shaped joints between adjacent blocks to a minimum distance of 12" (300 mm) behind the block unit.
  - 3. Drainage aggregate shall be placed in 9-inch maximum lifts and compacted by a minimum of three (3) passes of a vibratory plate compactor capable exerting a minimum of 2,000 lb (8.9 kN) of centrifugal force.
  - 4. Unit core fill shall consist of drainage aggregate and be placed in the precast modular block unit vertical core slot. The core fill shall completely fill the slot to the level of the top of the block unit. The top of the block unit shall be broom-cleaned prior to placement of subsequent block courses. No additional courses of precast modular blocks may be stacked before the unit core fill is installed in the blocks on the course below.
  - 5. Geotextile fabric shall be placed between the drainage aggregate and the reinforced fill as required on the retaining wall construction shop drawings.
  - 6. Subsequent courses of block units shall be installed with a running bond (half block horizontal course-to-course offset). The shear channel of the upper block shall be fully engaged with the shear knobs of the block course below. The upper block course shall be pushed forward to fully engage the interface shear key between the blocks and to ensure consistent face batter and wall alignment. Geogrid, drainage aggregate, unit core fill, geotextile and properly compacted backfill shall be complete and in-place for each course of block units before the next course of blocks is stacked.
  - 7. The elevation of retained soil fill shall not be less than 1 block course (18" (457 mm)) below the elevation of the reinforced backfill throughout the construction of the retaining wall.
  - 8. Cap units shall be secured with an adhesive in accordance with the precast modular block manufacturer's recommendation.
- D. Geogrid Reinforcement Installation
  - 1. Geogrid reinforcement shall be installed at the locations and elevations shown on the construction shop drawings on level fill compacted to the requirements of this specification.
  - 2. Reinforcement length (L) of the geogrid reinforcement is measured from the back of the precast modular block unit. The cut length (L<sub>c</sub>) is two times the reinforcement length plus additional length through the block facing unit. The cut length is calculated as follows:  

$$L_c = 2 \times L + 3 \text{ ft } (2 \times L + 0.9 \text{ m}) \text{ (28" (710 mm) block unit)}$$

3. The geogrid strip shall be continuous throughout its entire length and may not be spliced. The geogrid shall be furnished in nominal, prefabricated roll widths of 12" (300 mm) +/- 1/2" (13 mm). No field modification of the geogrid roll width shall be permitted.
  4. Geogrid material shall be pulled level and perpendicular to the block unit to which it is attached. Compaction shall begin at the back of the wall block unit and proceed to the embedment end of the geogrid. The geogrid strip shall be pulled taut to remove any slack, wrinkles or folds. The geogrid strip shall be pinned, staked, or secured by other method to keep the geogrid layer taut, as needed.
  5. Neither rubber tire nor track vehicles may operate directly on the geogrid. Construction vehicle traffic in the reinforced zone shall be limited to speeds of less than 5 mph (8 km/hr) once a minimum of 9 inches (230 mm) of compacted fill has been placed over the geogrid reinforcement. Sudden braking and turning of construction vehicles in the reinforced zone shall be avoided.
- E. Construction Tolerance. Allowable construction tolerance of the retaining wall shall be as follows:
1. Deviation from the design horizontal alignment, when measured along a 10' (3 m) straight wall section, shall not exceed 3/4" (19 mm).
  2. Deviation from the overall design vertical batter shall not exceed 1/2" (13 mm) per 10' (3 m) of wall height and the top of the wall horizontal offset for the centerline roadway shall not exceed 1" from the dimensions shown on the contract plans.
  3. The maximum allowable offset (horizontal bulge) of the face in any precast modular block joint shall be 1/2" (13 mm).
  4. The base of the precast modular block wall excavation shall be within 1" (25.4 mm) of the staked elevations, unless otherwise approved by the Inspection Engineer.
  5. Differential vertical settlement of the face shall not exceed 1" (300 mm) along any 200' (61 m) of wall length.
  6. The maximum allowable vertical displacement of the face in any precast modular block joint shall be 1/2" (13 mm).
  7. The wall face shall be placed within 2" (50 mm) of the horizontal location staked.

### 3.05 REINFORCED FILL AND RETAINED FILL PLACEMENT

- A. Backfill material shall be installed in loose lifts that do not exceed a thickness of 6 in. (155 mm) within 3 ft of the back of PMB block units and not exceeding 9 in (230 mm) within the retained and reinforced zones.
- B. Backfill material placed immediately behind the drainage aggregate shall be compacted as follows:
  1. 95% of maximum dry density at  $\pm 3\%$  optimum moisture content per ASTM D698 standard proctor or 80% relative density per ASTM D4254.
- C. Compactive effort within 3 ft (0.9 m) of the back of the precast modular blocks should be accomplished with walk-behind compactors. Compaction in this zone shall be within 95% of maximum dry density at  $\pm 3\%$  optimum moisture content per ASTM D698 standard proctor or 80% relative density per ASTM D4254. Heavy equipment should not be operated within 3 ft (0.9 m) of the back of the precast modular blocks.
- D. At the end of each workday, the Retaining Wall Installation Contractor shall grade the surface of the last lift of the reinforced fill to a  $3\% \pm 1\%$  slope away from the precast modular block wall face and compact it.



- E. The Retaining Wall Installation Contractor shall protect the precast modular block wall structure against surface water runoff at all times through the use of berms, diversion ditches, silt fence, temporary drains and/or any other necessary measures to prevent soil staining of the wall face, scour of the retaining wall foundation or erosion of the reinforced backfill or wall infill.

### 3.06 OBSTRUCTIONS IN THE REINFORCED FILL ZONE

- A. The Retaining Wall Installation Contractor shall make all required allowances for obstructions behind and through the wall face in accordance with the approved construction shop drawings. Utility obstructions shall be installed concurrent with the retaining wall construction and coordinated with the General Contractor. All reinforced fill zone utility construction shall be performed under the supervision of and coordination with the Retaining Wall Installation Contractor. Any damage to the PMB units, drainage system and geogrids shall be repaired or replaced immediately. All utility bedding and backfill placement and compaction shall be in accordance with these specifications.
- B. Should unplanned obstructions become apparent for which the approved construction shop drawings do not account, the affected portion of the wall shall not be constructed until the Owner's Representative can appropriately address the required procedures for construction of the wall section in question.

### 3.07 COMPLETION

- A. The unpaved areas at the face of the retaining wall shall be sloped away from the wall. Compacted low-permeability fill shall be placed to prevent ponding of water at the face of the completed retaining wall.
- B. Temporary erosion and control measures and grading at the top of the completed wall shall be coordinated between Owner's Representative, the General Contractor and the Retaining Wall Installation Contractor to prevent erosion and ponding. These measures and grading will be the responsibility of the Retaining Wall Installation Contractor. Maintenance of these measures shall remain with the General Contractor.
- C. The General Contractor shall confirm that the as-built precast modular block wall geometries conform to the requirements of this section. The General Contractor shall notify the Owner's Representative of any deviations.



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**SECTION 902  
CONTRACT FORM**

**STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR  
ON THE BASIS OF UNIT PRICES**

THIS AGREEMENT made as of the \_\_\_\_\_ day of \_\_\_\_\_, in the year \_\_\_\_\_ by and between the

Mississippi Gulf Coast Community College (MGCCC)  
(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 1: WORK**

The CONTRACTOR shall perform all work as specified or indicated in the Contract Documents for the completion of the Project generally described as follows:

**MISSISSIPPI GULF COAST COMMUNITY COLLEGE HARRISON COUNTY  
CAMPUS ACCESS ROAD PHASE I**

**ARTICLE 2: ENGINEER**

The project has been designed by Neel-Schaffer, Inc. located at 772 Howard Avenue, Biloxi, MS 39530 who is known as the ENGINEER throughout the specifications. Neel-Schaffer, Inc. will act as ENGINEER in connection with the completion of the Project in accordance with the Contract Documents. It is understood that the Engineer may designate authority to any member of his staff, as he deems necessary.

**ARTICLE 3: CONTRACT TIME**

The proposal also requires the Bidder to specify the number of calendar days necessary to complete the project after the issuance of the Notice to Proceed which will determine the contract time.

**ARTICLE 4: CONTRACT PRICE**

CONTRACTOR submitted the approved bid for the performance of the work described in the contract documents in the total sum of:

\$ \_\_\_\_\_.

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 5: PROGRESS AND FINAL PAYMENTS**

CONTRACTOR shall submit pay requests in accordance with the specifications. 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, provided that the estimate reaches the OWNER in due time to be placed on the Board agenda. 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.

- 5.1 Prior to 50% completion, progress payments will be in an amount equal to: 95% of the work completed, and 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.
- 5.2 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 as noted in Section 105.16.2 "Final Acceptance" of the Specifications.**

#### **ARTICLE 6: CONTRACT DOCUMENTS**

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:

- 6.1 This agreement (Pages 1 to 7, inclusive),
- 6.2 Exhibits to this Agreement,
- 6.3 CONTRACTOR's Proposal and Bonds,
- 6.4 Notice of Award,
- 6.5 Advertisement, Section 901
- 6.6 Testing and Submittal Requirements

STANDARD FORM OF AGREEMENT (Continued)

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- 6.7 Notice to Bidders, Section 904,
- 6.8 Special Provisions, Section 907,
- 6.9 Technical Specifications, (Mississippi Standard Specifications for Road and Bridge Construction, 2017 Edition, Excluding Division 900),
- 6.10 Drawings consisting of sheet 1 of \_\_, thru \_\_ of \_\_,
- 6.11 Any Addenda to the contract documents.
- 6.12 Any modifications, including Change Orders, duly delivered after execution of this Agreement, and
- 6.13 Notice to Proceed.

**ARTICLE 7: MISCELLANEOUS**

- 7.1 Terms used in this Agreement, which are defined in Section 101 of the Specification, shall have the meanings indicated in the Specifications.
- 7.2 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.
- 7.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto in respect to all covenants, agreements and obligations contained in the Contract Documents.
- 7.4 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.
- 7.5 Contractor shall guarantee all work for two full years after the date of final payment by the OWNER for this project under Special Provision 105 Control of Work.
- 7.6 The Contractor shall pay liquidated damages as specified under Special Provision 108 Prosecution and Progress.
- 7.7 Insurance Requirements: CONTRACTOR shall carry 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; Workers'

Compensation and Employers' Liability with a waiver subrogation in favor of the Owner - Statutory & \$100,000 each accident; \$100,000 each employee; \$500,000 policy limit. Each policy shall be signed or countersigned by a Mississippi Resident Agent of the insurance company. 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. The Contractor shall name the Owner 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.

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 Sum 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 Owner, 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 repairs costs to the project.

#### **ARTICLE 8: OTHER PROVISIONS**

- 8.1 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.
- 8.2 OWNER may terminate this contract at any time by giving written notice to CONTRACTOR of such termination and specifying the effective date thereof in accordance with section 108.08 of the Specifications. 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.

- 8.3 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.
- 8.4 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.
- 8.5 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 insure 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.
- 8.6 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.
- 8.7 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.
- 8.8 Participants employed or trained for inherently dangerous occupations, shall be assigned to work in accordance with reasonable safety practices.

- 8.9 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.
- 8.10 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 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.
- 8.11 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.
- 8.12 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):
- Clean Air Act, 42 U.S.C., 1857, et seq. (Amended to 42 U.S.C., 7602, et. seq.)
  - 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.
  - Environmental Protection Agency (EPA) regulations pursuant to 40 C.F.R., Part 15, as amended.
- 8.13 CONTRACTOR agrees to procure SUBCONTRACTORS in a fair and nondiscriminatory manner.
- 8.14 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. CONTRACTOR shall not enter into any SUBCONTRACT without the written approval of OWNER.



STANDARD FORM OF AGREEMENT (Continued)

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IN WITNESSETH WHEREOF, the parties have executed this Agreement the day and year first above written.

OWNER: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

BY: \_\_\_\_\_

BY: \_\_\_\_\_  
(Corporate Seal)

ATTEST: \_\_\_\_\_

ATTEST: \_\_\_\_\_

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**SECTION 903  
PAYMENT AND PERFORMANCE BOND**

CONTRACT BOND FOR:

**MISSISSIPPI GULF COAST COMMUNITY COLLEGE,  
HARRISON COUNTY CAMPUS ACCESS ROAD  
PHASE I**

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  
Mississippi Gulf Coast Community College (MGCCC), 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 Mississippi Gulf  
Coast Community College bearing the date of \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, hereto annexed,  
for the construction of certain projects on the Harrison County Campus as mentioned in said contract  
in accordance with the plans, specifications and special provisions therefore, on file in the office of  
the Mississippi Gulf Coast Community College.

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 Mississippi  
Gulf Coast Community College 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 Mississippi Gulf Coast Community College or any officer of the authorized in such cases,  
for double any amount in money or property, the Owner may lose or be overcharged or otherwise

PAYMENT AND PERFORMANCE BOND FORM (Continued)

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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 Mississippi Gulf Coast Community College 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)

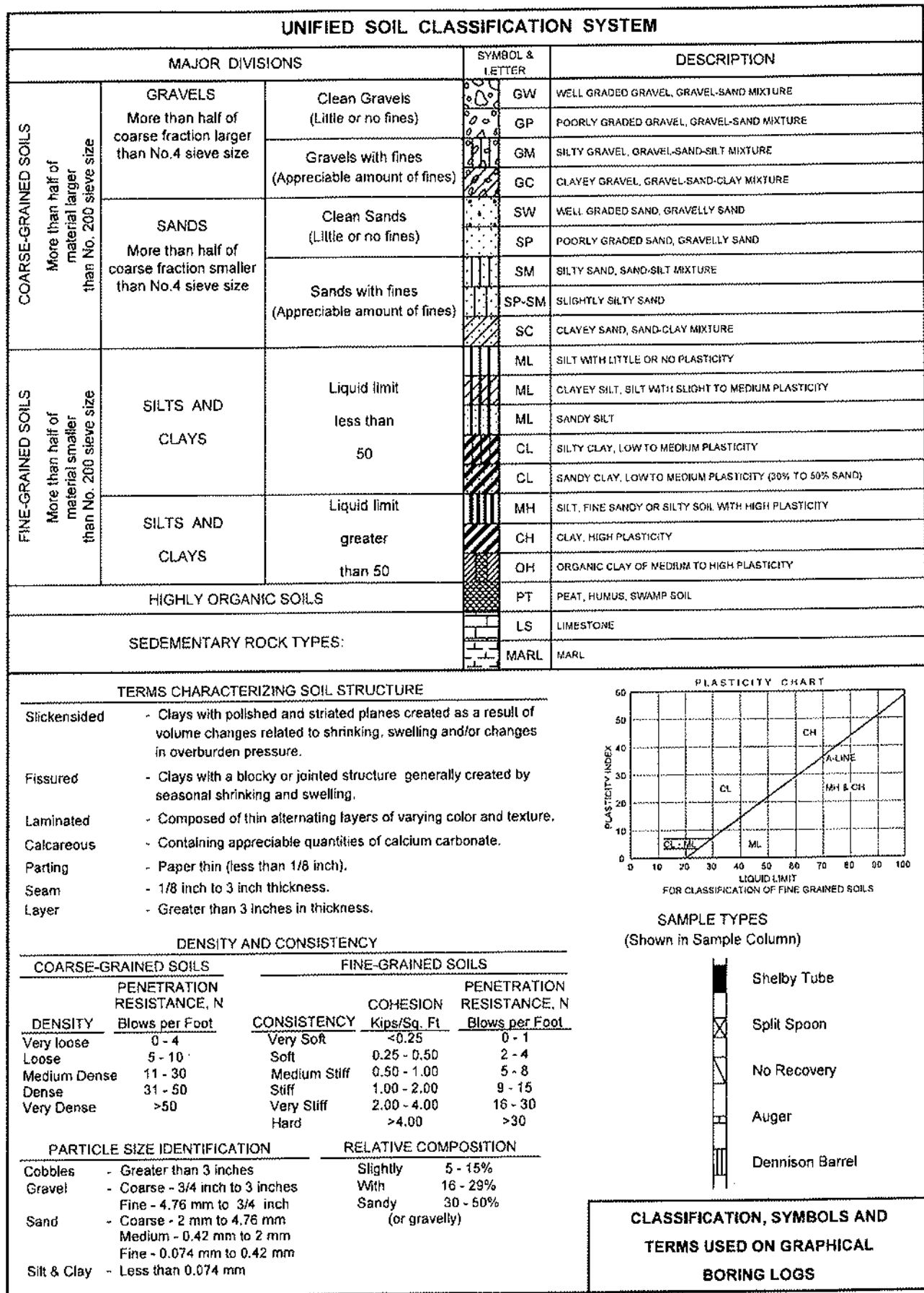
Title: \_\_\_\_\_

\_\_\_\_\_  
(Name and address of local  
Mississippi representative)

(Contractor's Seal)

(Surety's Seal)

# APPENDIX A







**APPROXIMATE BORING LOCATIONS**

**ACCESS ROAD**

**MISSISSIPPI GULF COAST COMMUNITY COLLEGE  
HARRISON COUNTNY, MISSISSIPPI**

**BCD PROJECT NO. 210275**

**FIGURE 1**

**LOG OF BORING NO. 1**  
 ACCESS ROAD  
 MISSISSIPPI GULF COAST COMMUNITY COLLEGE  
 HARRISON COUNTY, MISSISSIPPI

TYPE: 4" Short-flight auger

See Figure 1  
 LOCATION: Station 11+00

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	AASHTO	BLOWS PER FT	POCKET PENETROMETER	WATER CONTENT	ATTERBERG LIMITS			VOLUME CHANGE %	DRY DENSITY, PCF	CBR (EST.)	% PASSING NO. 200 SIEVE
								LL	PL	PI				
			SURFACE EL: ±ft											
1			Medium dense tan silty sand (SM)	A-2-4			3							
2														
3								6					20	16.1
4														
5			Medium dense white and tan sand (SP)	A-3			13						20	1.4
6			- dark gray 6' to 8'											
7								18						
8			- loose, black with organics below 8'											
9			- wet below 9'											
10							81							
			Boring was completed at 10'											
11														
12														
13														
14														
15														
BORING DEPTH: 10 ft			COMMENTS:			GROUNDWATER DATA: Free water encountered at an approximate depth of 9' during auger drilling. Water level did not rise after about 15 minutes.								
DATE: 08/19/21														

210276

**LOG OF BORING NO. 2**  
**ACCESS ROAD**  
**MISSISSIPPI GULF COAST COMMUNITY COLLEGE**  
**HARRISON COUNTY, MISSISSIPPI**

TYPE: 4" Short-flight auger

See Figure 1  
 LOCATION: Station 13+50

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	AASHTO	BLOWS PER FT	POCKET PENETROMETER	WATER CONTENT	ATTERBERG LIMITS			VOLUME CHANGE %	DRY DENSITY, PCF	CBR (EST.)	% PASSING NO. 200 SIEVE
								LL	PL	PI				
			SURFACE EL: ±ft											
1			Medium dense tan sand with silt (SP-SM)	A-2-4			3			NP			20	12.0
2							2							
3														
4														
5							3							
6			Medium dense light gray sand (SP)	A-3			16						20	1.1
7														
8														
9			- wet below 9'											
10			Boring was completed at 10'											
11														
12														
13														
14														
15														
BORING DEPTH: 10 ft				COMMENTS:				GROUNDWATER DATA: Free water encountered at an approximate depth of 9' during auger drilling. Water level did not rise after about 15 minutes.						
DATE: 08/19/21														

210276

**FIGURE 4**



**LOG OF BORING NO. 3**  
 ACCESS ROAD  
 MISSISSIPPI GULF COAST COMMUNITY COLLEGE  
 HARRISON COUNTY, MISSISSIPPI

TYPE: 4" Short-flight auger

See Figure 1  
 LOCATION: Station 16+00

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	AASHTO	BLOWS PER FT	POCKET PENETROMETER	WATER CONTENT	ATTERBERG LIMITS			VOLUME CHANGE %	DRY DENSITY, PCF	CBR (EST.)	% PASSING NO. 200 SIEVE
								LL	PL	Pi				
			SURFACE EL: ±ft											
1			Medium dense tan silty sand (SM)	A-2-4			4					20	12.8	
2														
3							8							
4				Loose light gray sand (SP)										
5					A-3			21					20	2.0
6				- wet below 6'										
7								27						
8														
9														
10								30						
11			Boring was completed at 10'											
12														
13														
14														
15														
BORING DEPTH: 10 ft			COMMENTS:			GROUNDWATER DATA: Free water encountered at an approximate depth of 10' during auger drilling. Water level did not rise after about 15 minutes.								
DATE: 08/19/21														

210276

**LOG OF BORING NO. 4**  
**ACCESS ROAD**  
**MISSISSIPPI GULF COAST COMMUNITY COLLEGE**  
**HARRISON COUNTY, MISSISSIPPI**

TYPE: 4" Short-flight auger

See Figure 1  
 LOCATION: Station 18+50


DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	AASHTO	BLOWS PER FT	POCKET PENETROMETER	WATER CONTENT	ATTERBERG LIMITS			VOLUME CHANGE %	DRY DENSITY, PCF	CBR (EST.)	% PASSING NO. 200 SIEVE
								LL	P <sub>L</sub>	P <sub>I</sub>				
			SURFACE EL: ±ft											
1			Loose gray silty sand (SM)	A-2-4			21						20	
2			Loose light gray and tan sand with silt (SP-SM) - wet at 3'  - black with organics below 4'	A-3			23						20	8.9
3														
4							32							
5			Boring was completed at 5'											
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
BORING DEPTH: 5 ft				COMMENTS:			GROUNDWATER DATA: Free water encountered at an approximate depth of 3' during auger drilling. Water level did not rise after about 15 minutes.							
DATE: 08/19/21														

240276

**LOG OF BORING NO. 5**  
 ACCESS ROAD  
 MISSISSIPPI GULF COAST COMMUNITY COLLEGE  
 HARRISON COUNTY, MISSISSIPPI

TYPE: 4" Short-flight auger

See Figure 1  
 LOCATION: Station 21+00

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	AASHTO	BLOWS PER FT	POCKET PENETROMETER	WATER CONTENT	ATTERBERG LIMITS			VOLUME CHANGE %	DRY DENSITY, PCF	CBR (EST.)	% PASSING NO. 200 SIEVE
								LL	PL	PI				
			SURFACE EL: ±ft											
1			Medium dense light gray and tan silty sand (SM)	A-2-4			6					20	13.4	
2														
3								6						
4														
5			Loose tan sand (SP) - wet at 4.5'	A-3			29					20		
6			Boring was completed at 5'											
7														
8														
9														
10														
11														
12														
13														
14														
15														
BORING DEPTH: 5 ft			COMMENTS:			GROUNDWATER DATA: Free water encountered at an approximate depth of 4.5' during auger drilling. Water level did not rise after about 15 minutes.								
DATE: 08/19/21														


210276

FIGURE 7

**LOG OF BORING NO. 6**  
**ACCESS ROAD**  
**MISSISSIPPI GULF COAST COMMUNITY COLLEGE**  
**HARRISON COUNTY, MISSISSIPPI**

TYPE: 4" Short-flight auger

See Figure 1  
 LOCATION: Station 23+50

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	AASHTO	BLOWS PER FT	POCKET PENETROMETER	WATER CONTENT	ATTERBERG LIMITS			VOLUME CHANGE %	DRY DENSITY, PCF	CBR (EST.)	% PASSING NO. 200 SIEVE
								LL	PL	PI				
			SURFACE EL: ±ft											
1			Medium dense tan and light gray silty sand (SM)	A-2-4			9					15		
2														
3									17				20	16.3
4			Loose tan sand (SP) - wet at 4.5'	A-3										
5								27				20		
5			Boring was completed at 5'											
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
BORING DEPTH: 5 ft			COMMENTS:			GROUNDWATER DATA: Free water encountered at an approximate depth of 4.5' during auger drilling. Water level at an approximate depth of 3' after about 15 minutes.								
DATE: 08/19/21														

210275

**FIGURE 8**

**LOG OF BORING NO. 7**  
 ACCESS ROAD  
 MISSISSIPPI GULF COAST COMMUNITY COLLEGE  
 HARRISON COUNTY, MISSISSIPPI

TYPE: 4" Short-flight auger

See Figure 1  
 LOCATION: Station 26+00

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	AASHTO	BLOWS PER FT	POCKET PENETROMETER	WATER CONTENT	ATTERBERG LIMITS			VOLUME CHANGE %	DRY DENSITY, PCF	CBR (EST.)	% PASSING NO. 200 SIEVE	
								LL	PL	PI					
			SURFACE EL: ±ft												
1			Medium dense tan clayey sand (SC)	A-4			17	21	13	8			15	46.7	
2			Medium dense light gray silty sand (SM), slightly clayey	A-2-4			15						17		
3															
4															
5								18						16	34.3
6															
7						19									
8			Boring was completed at 7'												
9															
10															
11															
12															
13															
14															
15															
BORING DEPTH: 7 ft			COMMENTS:			GROUNDWATER DATA: Free water encountered at an approximate depth of 8' during auger drilling. Water level did not rise after about 15 minutes.									
DATE: 08/19/21															

210275

**LOG OF BORING NO. 8**  
**ACCESS ROAD**  
**MISSISSIPPI GULF COAST COMMUNITY COLLEGE**  
**HARRISON COUNTY, MISSISSIPPI**

TYPE: 4" Short-flight auger

See Figure 1  
 LOCATION: Station 28+50

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	AASHTO	BLOWS PER FT	POCKET PENETROMETER	WATER CONTENT	ATTERBERG LIMITS			VOLUME CHANGE %	DRY DENSITY, PCF	CBR (EST.)	% PASSING NO. 200 SIEVE
								LL	PL	PI				
			SURFACE EL: ±ft											
1			Medium dense tan silty sand (SM)	A-2-4			10					20	20.7	
2			Loose tan silty clayey sand (SC-SM)	A-2-4			19	20	16	4		16	25.8	
3														
4			Loose light gray clayey sand (SC)	A-4			25					15		
5														
6			- wet at 6.5'											
7			Soft light gray sandy clay (CL)	A-7-6			39	41	17	24		5	68.6	
8			- gray below 9'				39							
9														
10			Boring was completed at 10'											
11														
12														
13														
14														
15														
BORING DEPTH: 10 ft			COMMENTS:			GROUNDWATER DATA: Free water encountered at an approximate depth of 6.5' during auger drilling. Water level did not rise after about 15 minutes.								
DATE: 08/19/21														

219276