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Sealed proposals will be received by the City of Hinesville located at City Hall, 115 East ML King Jr. Drive, Hinesville, Georgia 31313 on September 20, 2017 until 2:00 p.m. local time for Roadway and Drainage Improvements for Mattie Street and Gibson Street.

The work to be performed consists of furnishing all labor and materials to complete the street paving projects. More specifically, the project will consist of 2,000 linear feet, 24” curbing and gutter, 3,000 square yards pavement, base and paving.

Plans, Specifications, and Contract documents are open to public inspection at the Hinesville City Hall, 115 East ML King Jr. Drive, Hinesville, Georgia, CMD Group, Dodge Plan Room and P.C. Simonton and Associates, Inc., 309 N. Main Street Hinesville, Georgia. Copies of the Plans, Specifications, and Contract Documents may be obtained by contacting P.C. Simonton and Associates, Inc., 1050 Parkside Commons, Suite 101, Greensboro, Georgia 30642, (706) 454-0870 and by depositing a non-refundable One Hundred Dollars ($100.00) for each set of plans requested.

Each Contractor must prequalify for bid by submitting a completed "Statement of Bidder Qualifications" form supplied by the Engineer. Bids will be accepted from prequalified bidders only.

Bids must be accompanied by a certified check or bid bond in an amount equal to at least five percent (5%) of total amount bid for the completed work.

No bids may be withdrawn for a period of sixty (60) days after the closing time schedule for receipt of bids.

The Owner reserves the right to accept or reject any or all bids and to waive informalities. Award of the contract, if it is awarded, will be to the lowest responsible bidder.

NOTE: Plans and Specifications must be obtained no later than five (5) working days before the bid date. No exceptions.
INSTRUCTIONS TO BIDDER

1. SUBMISSION OF PROPOSALS:

A. Sealed proposals will be received by City of Hinesville at the Hinesville City Hall until 2:00 p.m. local time, on September 20, 2017 for all labor and materials required to fully complete the work identified in the plans and specifications for Roadway and Drainage Improvements for Mattie Street and Gibson Street.

B. At the time and place noted above, the proposals will be publicly opened and read aloud.

C. The proposal (including Statement of Bidder's Qualifications) shall be submitted in duplicate on an exact copy of the proposal form bound herein. Both copies of the Proposal Form must be signed. All blank spaces on the forms shall be filled in and all information called for shall be provided. The terms "NO BID" may be used to fill in a blank space on the Proposal Form. All signatures shall be in ink and in longhand, and the completed forms shall be without alterations or corrections; any interlineations must be initialed by the Bidder.

D. Failure to submit a proposal in the form requested or the inclusion of any alternates, conditions, limitations or provisions not called for, will render the bid irregular and shall be considered sufficient cause for rejection of the bid.

E. Proposal shall be in opaque, sealed envelope and marked "Street Paving Project, Mattie and Gibson Street" and shall bear the name of the Bidder. Proposal is to reach the above address no later than the hour and date named above, or authorized extension thereof. No proposal will be received after that time.

F. Proposals, together with the full bid bond, may be withdrawn by Bidders prior to the time set for official opening. After time has been called, no proposal may be withdrawn for a period of sixty (60) days after the time and date of the opening.

2. INTERPRETATIONS:

A. Neither Owner nor Engineer will be responsible for any oral instructions or interpretations of the Drawings and Specifications.

B. Requests for interpretations of Drawings and Specifications must be made in writing to the Engineer no later than seven (7) days prior to date set for receipt of bids, and failure on the part of the successful bidder to do so shall not relieve him as Contractor of the obligation to execute such work in accordance with a later interpretation by the Engineer.
3. BASIS OF CONTRACT AWARD:

A. The competency and responsibility of a bidder will be considered in making the award. Owner does not obligate himself to accept the lowest bid or any other bid.

B. The Owner reserves the right to reject any or all proposals and to waive any technicalities.

4. FORMS AND BONDS:

A. The Bidder's attention is directed to the Proposal Form and the Performance and Labor and Materials Payment Bond section.

B. The bond shall be accompanied with the agents and underwriters name, address and telephone number.

5. INSPECTING AND TESTING OF MATERIALS:

A. Whenever, in these Contract Documents, inspecting, testing, or certification of material(s) is called for, the selection of bureaus, laboratories and/or agencies for such inspecting and testing shall be made by an Independent Testing Laboratory and the character of the test shall be stipulated by the Engineer. Documentary evidence satisfactory to the Engineer that the materials have passed the required inspection and test must be furnished in quadruplicate to the Engineer by the bureau, agency, or laboratory selected. Materials satisfactorily meeting the requirements of the inspection or tests shall be approved by the Engineer and the Contractor notified of the results. The cost of such inspecting and testing shall be paid for by the Contractor.

6. CONSTRUCTION SCHEDULE:

A. The Contractor will be required to submit a construction schedule in writing identifying milestones and completion dates at the preconstruction conference. He shall also be required to submit a resume' of the proposed job superintendent for approval by the Engineer.
7. **INSURANCE:**
   
   A. The Contractor's attention is directed to Article 11 of the Supplemental General Conditions, "Insurance." He should review these requirements and be prepared to submit insurance certificates providing the coverage identified. On the insurance certificates, the "Certificate Holder" should be listed as both the Owner and P.C. Simonton and Associates, Inc.

8. **CONSTRUCTION STAKING:**
   
   A. The Owner will provide horizontal and vertical control. The Contractor will be responsible for construction staking.

9. **UTILITY CONTRACTOR LICENSING LAW:**
   
   A. Effective December 31, 1993, a new law took effect which has an indirect effect on engineers. As of that date all utility contractors must be licensed; a utility contractor is anyone who digs 5 feet or deeper on a public or private project and where the cost of work exceeds $100,000.

   B. Effective July 1, 2004 the law was modified where the cost of work has no dollar amount therefore anyone who digs 5 feet or deeper on a public or private project must have a utility license.

   C. “It shall be unlawful for any person to contract with any other person for the performance of utility contracting work who is known by such person to not have a current, valid license as a utility contractor pursuant to this chapter.” (O.C.G.A. 43-14-8.2(h)) Bids or proposals for utility contracting work will NOT be opened or considered unless the Utility Contractor License number is written on the face of the bid or proposal.
PROPOSAL

City of Hinesville
115 East ML King Jr. Drive
Hinesville, GA 31313

Submitted: ___________________, ________

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

The Bidder further declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the Plans and Specifications for the work and Contractual Documents relative thereto, and has read all Special Provisions and General Conditions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed.

The Bidder proposes and agrees, if the Proposal is accepted, to contract with City of Hinesville in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of the work, in full and in complete accordance with the shown, noted, described, and reasonably intended requirements of the Specifications and Contract Documents, to the full and entire satisfaction of the City of Hinesville with a definite understanding that no money will be allowed for extra work except as set forth in the attached General Conditions and Contract Documents, for prices on the following pages.
**BID ITEMS**
**STREET PAVING PROJECTS**
PCS NO. 2017-02 2017-03

### Gibson Street

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Quantity</th>
<th>Units</th>
<th>Description</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1</td>
<td>LS</td>
<td>Clearing and Grubbing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>1</td>
<td>LS</td>
<td>Grading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>100</td>
<td>LF</td>
<td>24&quot; Curb and Gutter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>2000</td>
<td>SY</td>
<td>6&quot; Crusher Run Base</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>2000</td>
<td>SY</td>
<td>12.5mm Superpave Asphalt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>1</td>
<td>LS</td>
<td>Centerline and Edge Striping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>3</td>
<td>EA</td>
<td>Pedestal Top Structures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>1</td>
<td>EA</td>
<td>15&quot; FES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>1</td>
<td>EA</td>
<td>15&quot; H.W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>328</td>
<td>LF</td>
<td>15&quot; RCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>2</td>
<td>EA</td>
<td>18&quot; SES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>60</td>
<td>LF</td>
<td>18&quot; RCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>800</td>
<td>LF</td>
<td>&quot;NS&quot; Silt Fence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>3</td>
<td>EA</td>
<td>Sediment Traps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>100</td>
<td>SY</td>
<td>Rip Rap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>1</td>
<td>LS</td>
<td>Temporary and Permanent Grassing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>1</td>
<td>LS</td>
<td>Mobilization</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Gibson Street**

### Mattie Street

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Quantity</th>
<th>Units</th>
<th>Description</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1</td>
<td>LS</td>
<td>Clearing and Grubbing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>1</td>
<td>LS</td>
<td>Grading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>100</td>
<td>LF</td>
<td>Fence Removal and Replacement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>2000</td>
<td>LF</td>
<td>24&quot; Curb and Gutter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>2500</td>
<td>SY</td>
<td>6&quot; Crusher Run Base</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>2500</td>
<td>SY</td>
<td>112.5mm Superpave Asphalt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>300</td>
<td>SY</td>
<td>Misc Concrete Paving</td>
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<td></td>
</tr>
<tr>
<td>8.</td>
<td>3</td>
<td>EA</td>
<td>Grate Inlets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>4</td>
<td>EA</td>
<td>Catch Basins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>5</td>
<td>EA</td>
<td>Junction Boxes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>1</td>
<td>EA</td>
<td>Catch Basin with Orifice Wall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>600</td>
<td>LF</td>
<td>15&quot; RCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>615</td>
<td>LF</td>
<td>18&quot; RCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>1</td>
<td>EA</td>
<td>18&quot; H.W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>1</td>
<td>EA</td>
<td>Connection to Exist C.B.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Mattie Street**

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**P-2**
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>1</td>
<td>LS</td>
<td>Centerline Striping</td>
</tr>
<tr>
<td>17.</td>
<td>1100</td>
<td>LF</td>
<td>Type S Slit Fence</td>
</tr>
<tr>
<td>18.</td>
<td>7</td>
<td>EA</td>
<td>Sediment Traps</td>
</tr>
<tr>
<td>19.</td>
<td>1</td>
<td>LS</td>
<td>Temporary and Permanent Grassing</td>
</tr>
<tr>
<td>20.</td>
<td>1</td>
<td>LS</td>
<td>Mobilization</td>
</tr>
</tbody>
</table>

**Total Mattie Street**

**Total Project**

$
The Bidder further proposes and agrees hereby to commence work under his Contract, with adequate force and equipment, on a date to be specified in written order of the ENGINEER and shall fully complete all work hereunder within One Hundred (100) consecutive days from and including said date.

The Bidder declares that he understands that the quantities shown for unit price items, are approximate only, are valid only upon written authorization of the ENGINEER, and are subject to either increase or decrease and that should the quantities of any items of work be increased, the Bidder proposes to do the additional at the unit prices stated herein; and should the quantities be decreased, the Bidder also understands that payment will be made on the basis of actual quantities at the unit price bid and will make no claim for anticipated profits for any decrease in quantities, and that actual quantities will be determined upon completion of the work, at which time adjustment will be made to the Contract amount by direct increase or decrease.

The undersigned further agrees that, in case of failure on his part to execute the Construction Contract and the bond within ten (10) consecutive calendar days after written notice being given of the award of the Contract, the check or bond accompanying this bid, and the monies payable thereon, shall be paid into the funds of the City of Hinesville as liquidated damages for such failure, otherwise the check or bid bond accompanying this proposal shall be returned to the undersigned.

Attached hereto is a certified check on the Bank of __________________________ or a Bid Bond by the __________________________ in the amount of __________________________ Dollars ($________________) made payable to the __________________________, in accordance with the conditions of the advertisement and provisions herein.

Submitted:

____________________________

By:

____________________________

Title:

____________________________
Bidders Address: _______________________________________________________________

City, State, Zip Code: __________________________________________________________

Telephone Number: ____________________________________________________________

Bonding Agent: _______________________________________________________________

Physical Address: ______________________________________________________________

Telephone Number: ____________________________________________________________

Underwriters Name: ___________________________________________________________

Physical Address: ______________________________________________________________

Telephone Number: ____________________________________________________________

FAILURE TO COMPLETE THIS SECTION IS GROUNDS FOR REJECTION

BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDUM:

No.______ Date ______________________ No.______ Date ______________________

No.______ Date ______________________ No.______ Date ______________________

EXPERIENCE AND REFERENCES

The Bidder shall state what work he had done (minimum of three) of similar nature to that bid for, and give references that will afford the Owner opportunity to judge as to experience, skill, business standing and financial ability. Failure to complete this section is grounds for rejection.
STATEMENT OF BIDDER'S QUALIFICATIONS

To accompany proposals submitted for construction of ____________________________

Full legal name of Bidder________________________________________________________

Business Address________________________________________________________________

Business Phone Number __________________________________________________________

Bidder is a (check one) Corporation ____ Partnership ____ Individual Proprietorship ____ Other (Specify) ______________________________

When Organized? __________________ When Incorporated? _____________________________

If Bidder is a partnership, list all names of all partners ____________________________________________

________________________________________________________________________________

How many years have you been engaged in the contracting business under the present firm name ______________________________

________________________________________________________________________________

Will you, if requested by the Owner, furnish to them your most recent Financial Statement within 48 hours after bid taking? ______ If yes, give date of statement ________________

Credit available for this contract $_____________________________________________________

Contracts now in hand, Gross Amount $_______________________________________________

Have you ever refused to sign a contract at your original bid? __________________________

Do you have a Georgia Utility Contractor's License? ____ If yes, number? __________________

Have you ever defaulted on a contract? _______________________________________________

Remarks _________________________________________________________________________

________________________________________________________________________________

(The above statements must be subscribed and sworn to before a Notary Public)

Sworn to and subscribed before me, _______________ Firm Name:________________________
this _______ day of ______________, 20___.

________________________________________________________________________________

(Notary Public) By: ___________________________________ (Title)
LAWFUL PRESENCE AFFIDAVIT

Pursuant to O.C.G.A. § 50-36-1, all persons who - either on behalf of themselves or on behalf of an individual, business, corporation, partnership, or other private entity - apply for certain public benefits must (1) be eighteen years of age or older and (2) submit an affidavit that they are lawfully present in the United States. Public benefits, as defined by O.C.G.A. § 50-36-1(a)(3)(A), include any grant, contract, loan, professional license, or commercial license provided by an agency of State or local government or by appropriated funds of a State or local government.

I, _________________________________________, swear or affirm under penalty of perjury under the laws of the State of Georgia that I am 18 years of age or older and (check one):

____ I am a United States citizen, or
____ I am a legal Permanent Resident of the United States, or
____ I am a qualified alien (other than as a permanent resident) or nonimmigrant in the United States pursuant to Federal law.

The secure and verifiable document provided with this affidavit can best be classified as:
_________________________________________________________________________________

I understand that this sworn statement is required by law because I have applied for a public benefit and/or a business license on my behalf as an individual or on behalf of a business, corporation, partnership, or other private entity. I understand that state law required me to provide proof that I am lawfully present in the United States prior to receipt of this public benefit as listed above. I further acknowledge that making a false, fictitious, or fraudulent statement or representation in this sworn affidavit is punishable under the criminal laws of Georgia under O.C.G.A. § 16-10-20 and it shall constitute a separate criminal offense each time a public benefit is fraudulently received.

__________________________________________  __________________________
Signature        Date

__________________________________________  __________________________
Title        *Alien Registration # for Non-citizens

__________________________________________  __________________________
Business Name       TIN or SSN

If this affidavit is not presented in person, applicant must submit a notarized copy of this affidavit.

Notarized this ____ Day of _______________________, in the State of ____________________,

County of ______________________

Notary

Commission Expires

*Note: O.C.G.A § 50-36-1(c) (2) requires that aliens under the Federal Immigration and Nationality Act., Title 8 U.S.C., as amended, provide their alien registration number. Because legal permanent residents are included in the federal definition of “alien”, legal permanent residents must also provide their alien registration number. Qualified aliens that do not have an alien registration number may supply another identifying number below:

_________________________________________________________________
Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. §13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of (name of public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present and affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

________________________________________________________________
Federal Work Authorization User Identification Number/E-verify User Number

________________________________________________________________
Date of Authorization/Date of contract between Contractor and Public Employer

________________________________________________________________
Legal Name of Contractor (please print)

________________________________________________________________
Legal Address of Contractor City, State, & Zip Code

________________________________________________________________
Name of Project

________________________________________________________________
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct. Executed on _____ of _____________, 20___ in _____________(city), _____________(state).

________________________________________________________________
Signature of Authorized Officer or Agent

________________________________________________________________
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS _____DAY OF _____________, 20__.

_________________________________                                            _______________________
Notary Public          Commission Expires
Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with (name of contractor) on behalf of (name of public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice of receipt of an affidavit from any sub-subcontractor that has contracted with a sub-subcontractor to forward, within five business days of receipt, a copy of such notice to the contractor.

Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

_________________________________
Federal Work Authorization User Identification Number

_________________________________
Date of Authorization

_________________________________
Name of Subcontractor

_________________________________
Name of Project

_________________________________
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on ___________ , 201__ in _____(city), ______(state).

_________________________________
Signature of Authorized Officer or Agent

_________________________________
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE ______ DAY OF __________________,201__.

_________________________________
NOTARY PUBLIC

My Commission Expires:

_________________________________
CONTRACT

THIS AGREEMENT, made this __________ day of ________________, 20__, by and between __________________________________, herein called "Owner" acting herein through _______________________________________________ and ______________________, of _______________________________________________. County of ____________________, and State of ____________________________, herein called "CONTRACTOR".

WITNESSETH: that for and in consideration of the payments and agreement hereinafter mentioned, to be made and performed by the OWNER, and the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows:

STREET PAVING PROJECT
FOR
CITY OF HINESVILLE

hereinafter called the project, for the sum of ______________________ Dollars ($__________) and all extra work in connection therewith, under the terms as stated in the General and Special Conditions of the Contract; and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal; the General Conditions, Supplemental General Conditions and Special Conditions of the Contract, the plans, which include all maps, plats, blue prints and other drawings and printed or written explanatory matter thereof, the specifications and Contract Documents therefore as prepared by P.C. Simonton and Associates, Inc., herein entitled the ENGINEER, and as enumerated in Paragraph 1 of the Supplementary General Conditions, all of which are made a part hereof and collectively evidence and constitute the Contract.
The Contractor hereby agrees to commence work under this Contract on or before a date to be specified in a written "Notice to Proceed" from the Owner and to fully complete the project within One Hundred (100) consecutive calendar days thereafter.

The Contractor further agrees to pay, as liquidated damages, the sum of $300 for each consecutive calendar day thereafter as hereinafter provided in Section 01001, Paragraph 1.11.

The owner agrees to pay the contractor in current funds for the past performance of the contract subject to additions and deductions as provided in the General Conditions, Article 14 of the contract. Retainage on progress payments shall be ten (10) percent until the project is substantially complete (80% or more) at which point retainage may be reduced to 5% depending on the contractor’s progress related to schedule and workmanship.
IN WITNESS WHEREOF, the parties present have executed this contract in four (4) counterparts, each of which shall be deemed an original, in the year and day first above mentioned.

ATTEST

(Owner)
By

(Secretary)

(Witness)

(Contractor)
By

(Secretary)

(Witness)

(Address and Zip Code)

(Title)
PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

1. REFERENCE

REFERENCES:

Provide references for work done, minimum of six, three within the last 12 months of similar size and nature and a listing of all jobs performed in the last 12 months. References will afford the owner opportunity to judge as to capabilities and performance of the contractor.

Provide name, brief description, address, phone number, and contact person for each project listed. Failure to complete this section in its entirety will be grounds for rejection.
This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS
OF THE CONSTRUCTION CONTRACT

Prepared by

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ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term’s singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

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

2. **Agreement**—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. **Application for Payment**—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. **Bid**—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. **Bidder**—An individual or entity that submits a Bid to Owner.

6. **Bidding Documents**—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. **Bidding Requirements**—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. **Change Order**—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. **Change Proposal**—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. **Claim**—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer’s decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer’s decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer
has declined to address. A demand for money or services by a third party is not a Claim.

11. **Constituent of Concern**—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. **Contract**—The entire and integrated written contract between the Owner and Contractor concerning the Work.

13. **Contract Documents**—Those items so designated in the Agreement, and which together comprise the Contract.

14. **Contract Price**—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. **Contract Times**—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. **Contractor**—The individual or entity with which Owner has contracted for performance of the Work.

17. **Cost of the Work**—See Paragraph 13.01 for definition.

18. **Drawings**—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. **Effective Date of the Contract**—The date, indicated in the Agreement, on which the Contract becomes effective.

20. **Engineer**—The individual or entity named as such in the Agreement.

21. **Field Order**—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

22. **Hazardous Environmental Condition**—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

23. **Laws and Regulations; Laws or Regulations**—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. **Liens**—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. **Milestone**—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

26. **Notice of Award**—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.

27. **Notice to Proceed**—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

28. **Owner**—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

29. **Progress Schedule**—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.

30. **Project**—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

31. **Project Manual**—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

32. **Resident Project Representative**—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.

33. **Samples**—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

34. **Schedule of Submittals**—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.

35. **Schedule of Values**—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.

36. **Shop Drawings**—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. **Site**—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

38. **Specifications**—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

39. **Subcontractor**—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

40. **Substantial Completion**—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

41. **Successful Bidder**—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

42. **Supplementary Conditions**—The part of the Contract that amends or supplements these General Conditions.

43. **Supplier**—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

44. **Technical Data**—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.

45. **Underground Facilities**—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

46. **Unit Price Work**—Work to be paid for on the basis of unit prices.

47. **Work**—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. **Work Change Directive**—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 **Terminology**

A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. **Intent of Certain Terms or Adjectives**:

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. **Day**:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. **Defective**:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
   a. does not conform to the Contract Documents; or
   b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
   c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. **Furnish, Install, Perform, Provide**:

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

A. Bonds: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. Evidence of Contractor’s Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.

C. Evidence of Owner’s Insurance: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 Copies of Documents

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 Before Starting Construction

A. Preliminary Schedules: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:

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

2. a preliminary Schedule of Submittals; and
3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 Preconstruction Conference; Designation of Authorized Representatives

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 Initial Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor’s full responsibility therefor.

2. Contractor’s Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor’s Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 Electronic Transmittals

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient’s use of software application packages, operating systems, or
ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 Intent

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 Reference Standards

A. Standards Specifications, Codes, Laws and Regulations

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

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies:

1. Contractor’s Verification of Figures and Field Measurements: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,
error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. **Contractor’s Review of Contract Documents**: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. **Resolving Discrepancies**:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

   a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

   b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 **Requirements of the Contract Documents**

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer’s written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.
3.05 Reuse of Documents

A. Contractor and its Subcontractors and Suppliers shall not:
   1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
   2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner’s express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 Starting the Work

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 Reference Points

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

4.04 Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 Delays in Contractor’s Progress

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor’s performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor’s sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
2. abnormal weather conditions;
3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
4. acts of war or terrorism.

D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner’s interest therein as necessary for giving notice of or filing a mechanic’s or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas:

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor’s operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part
by, or based upon, Contractor’s performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. **Removal of Debris During Performance of the Work:** During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. **Cleaning:** Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. **Loading of Structures:** Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 **Subsurface and Physical Conditions**

A. **Reports and Drawings:** The Supplementary Conditions identify:
   1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
   2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
   3. Technical Data contained in such reports and drawings.

B. **Reliance by Contractor on Technical Data Authorized:** Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
   1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
   2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
   3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.
5.04 **Differing Subsurface or Physical Conditions**

A. **Notice by Contractor:** If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
2. is of such a nature as to require a change in the Drawings or Specifications; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. **Engineer’s Review:** After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner’s obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations.

C. **Owner’s Statement to Contractor Regarding Site Condition:** After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations, in whole or in part.

D. **Possible Price and Times Adjustments:**

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
   a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
   b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
c. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
   a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
   b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor’s making such commitment; or
   c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner’s issuance of the Owner’s written statement to Contractor regarding the subsurface or physical condition in question.

5.05 Underground Facilities

A. Contractor’s Responsibilities: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
   1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
   2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
      a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
      b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
      c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
      d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. Notice by Contractor: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after
becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

C. **Engineer’s Review**: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. **Owner’s Statement to Contractor Regarding Underground Facility**: After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations in whole or in part.

E. **Possible Price and Times Adjustments**:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
   a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
   b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
   c. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times; and
   d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner’s issuance of the Owner’s written statement to Contractor regarding the Underground Facility in question.
5.06 **Hazardous Environmental Conditions at Site**

A. **Reports and Drawings:** The Supplementary Conditions identify:

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
2. Technical Data contained in such reports and drawings.

B. **Reliance by Contractor on Technical Data Authorized:** Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner’s written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.
ARTICLE 6 – BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor’s obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.

F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 Insurance—General Provisions

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is
maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party’s full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party’s obligation to obtain and maintain such insurance.

F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner’s termination rights under Article 16.

H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party’s interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor’s interests.

J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 Contractor’s Insurance

A. Workers’ Compensation: Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance for:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts.

2. United States Longshoreman and Harbor Workers’ Compensation Act and Jones Act coverage (if applicable).

3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor’s employees (by stop-gap endorsement in monopolist worker’s compensation states).
4. Foreign voluntary worker compensation (if applicable).

B. Commercial General Liability—Claims Covered: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees.

2. claims for damages insured by reasonably available personal injury liability coverage.

3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

C. Commercial General Liability—Form and Content: Contractor’s commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:
   a. Such insurance shall be maintained for three years after final payment.
   b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.

3. Broad form property damage coverage.

4. Severability of interest.

5. Underground, explosion, and collapse coverage.

6. Personal injury coverage.

7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.

D. Automobile liability: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

E. Umbrella or excess liability: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

F. Contractor’s pollution liability insurance: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result
of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

G. **Additional insureds:** The Contractor’s commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

H. **Contractor’s professional liability insurance:** If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

I. **General provisions:** The policies of insurance required by this Paragraph 6.03 shall:

1. include at least the specific coverages provided in this Article.
2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor’s performance of the Work and Contractor’s other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.
6.04 **Owner’s Liability Insurance**

A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner’s option, may purchase and maintain at Owner’s expense Owner’s own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

B. Owner’s liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner’s liability policies for any of Contractor’s obligations to the Owner, Engineer, or third parties.

6.05 **Property Insurance**

A. **Builder’s Risk**: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder’s risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder’s risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as “insureds.”

2. be written on a builder’s risk “all risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).

6. extend to cover damage or loss to insured property while in transit.

7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.

8. allow for the waiver of the insurer’s subrogation rights, as set forth below.

9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.

10. not include a co-insurance clause.

11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.

12. include performance/hot testing and start-up.

13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

B. Notice of Cancellation or Change: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

C. Deductibles: The purchaser of any required builder’s risk or property insurance shall pay for costs not covered because of the application of a policy deductible.

D. Partial Occupancy or Use by Owner: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder’s risk policy, or through Contractor) will provide notice of such occupancy or use to the builder’s risk insurer. The builder’s risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder’s risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.

E. Additional Insurance: If Contractor elects to obtain other special insurance to be included in or supplement the builder’s risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor’s expense.

F. Insurance of Other Property: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.
6.06 Waiver of Rights

A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder’s risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

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

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder’s risk insurance and any other property insurance applicable to the Work.

6.07 Receipt and Application of Property Insurance Proceeds

A. Any insured loss under the builder’s risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the
policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder’s risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES

7.01 Supervision and Superintendence

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 Labor; Working Hours

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner’s written consent, which will not be unreasonably withheld.

7.03 Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and
guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 “Or Equals”

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or equal” item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an “or equal” item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
   a. in the exercise of reasonable judgment Engineer determines that:
      1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
      3) it has a proven record of performance and availability of responsive service; and
      4) it is not objectionable to Owner.
   b. Contractor certifies that, if approved and incorporated into the Work:
      1) there will be no increase in cost to the Owner or increase in Contract Times;
      and
      2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. Contractor’s Expense: Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.

C. Engineer’s Evaluation and Determination: Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal”, which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
D. **Effect of Engineer’s Determination:** Neither approval nor denial of an “or-equal” request shall result in any change in Contract Price. The Engineer’s denial of an “or-equal” request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

E. **Treatment as a Substitution Request:** If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

### 7.05 Substitutes

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

   a. shall certify that the proposed substitute item will:
      1) perform adequately the functions and achieve the results called for by the general design,
      2) be similar in substance to that specified, and
      3) be suited to the same use as that specified.

   b. will state:
      1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
      2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
      3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

   c. will identify:
      1) all variations of the proposed substitute item from that specified, and
2) available engineering, sales, maintenance, repair, and replacement services.

d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. **Engineer’s Evaluation and Determination:** Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer’s determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. **Special Guarantee:** Owner may require Contractor to furnish at Contractor’s expense a special performance guarantee or other surety with respect to any substitute.

D. **Reimbursement of Engineer’s Cost:** Engineer will record Engineer’s costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. **Contractor’s Expense:** Contractor shall provide all data in support of any proposed substitute at Contractor’s expense.

F. **Effect of Engineer’s Determination:** If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer’s denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

### 7.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor’s Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner’s requirement of replacement.

G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor’s own acts and omissions.

J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.

K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

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

M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.

N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 Permits

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor’s Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.
7.09 Taxes
A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 Laws and Regulations
A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor’s compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor’s responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor’s obligations under Paragraph 3.03.

C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor’s Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 Record Documents
A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 Safety and Protection
A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

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

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

C. Contractor shall comply with the applicable requirements of Owner’s safety programs, if any. The Supplementary Conditions identify any Owner’s safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor’s safety program with which Owner’s and Engineer’s employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor’s duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

G. Contractor’s duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 Safety Representative

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 Hazard Communication Programs

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

7.15  **Emergencies**

A.  In emergencies affecting the safety or protection of persons or the Work or property at the
Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage,
injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes
that any significant changes in the Work or variations from the Contract Documents have
been caused thereby or are required as a result thereof. If Engineer determines that a
change in the Contract Documents is required because of the action taken by Contractor in
response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16  **Shop Drawings, Samples, and Other Submittals**

A.  **Shop Drawing and Sample Submittal Requirements**:

1.  Before submitting a Shop Drawing or Sample, Contractor shall have:
   a.  reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings
       and Samples and with the requirements of the Work and the Contract
       Documents;
   b.  determined and verified all field measurements, quantities, dimensions, specified
       performance and design criteria, installation requirements, materials, catalog
       numbers, and similar information with respect thereto;
   c.  determined and verified the suitability of all materials and equipment offered
       with respect to the indicated application, fabrication, shipping, handling, storage,
       assembly, and installation pertaining to the performance of the Work; and
   d.  determined and verified all information relative to Contractor’s responsibilities
       for means, methods, techniques, sequences, and procedures of construction, and
       safety precautions and programs incident thereto.

2.  Each submittal shall bear a stamp or specific written certification that Contractor has
    satisfied Contractor’s obligations under the Contract Documents with respect to
    Contractor’s review of that submittal, and that Contractor approves the submittal.

3.  With each submittal, Contractor shall give Engineer specific written notice of any
    variations that the Shop Drawing or Sample may have from the requirements of the
    Contract Documents. This notice shall be set forth in a written communication
    separate from the Shop Drawings or Sample submittal; and, in addition, in the case of
    Shop Drawings by a specific notation made on each Shop Drawing submitted to
    Engineer for review and approval of each such variation.

B.  **Submittal Procedures for Shop Drawings and Samples**: Contractor shall submit Shop
    Drawings and Samples to Engineer for review and approval in accordance with the
    accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1.  **Shop Drawings**:
   a.  Contractor shall submit the number of copies required in the Specifications.
   b.  Data shown on the Shop Drawings will be complete with respect to quantities,
       dimensions, specified performance and design criteria, materials, and similar data
       to show Engineer the services, materials, and equipment Contractor proposes to
provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. **Samples:**
   a. Contractor shall submit the number of Samples required in the Specifications.
   b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer’s review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. **Other Submittals:** Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. **Engineer’s Review:**
   1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer’s review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
   2. Engineer’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
   3. Engineer’s review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
   4. Engineer’s review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
   5. Engineer’s review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
   6. Engineer’s review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
   7. Neither Engineer’s receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. **Resubmittal Procedures**:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer’s time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer’s charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer’s charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 **Contractor’s General Warranty and Guarantee**

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor’s warranty and guarantee.

B. Contractor’s warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal;

6. the issuance of a notice of acceptability by Engineer;

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

8. any correction of defective Work by Owner.
D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor’s performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer’s officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 Delegation of Professional Design Services

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor’s responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.

B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop
Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional’s written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this paragraph, Engineer’s review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer’s review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 Other Work

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner’s employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner’s employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner’s employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others’ work with the written consent of Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor’s Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor’s Work. Contractor’s failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor’s Work except for latent defects and deficiencies in such other work.
8.02 Coordination

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner’s employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
2. an itemization of the specific matters to be covered by such authority and responsibility; and
3. the extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 Legal Relationships

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner’s employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor’s rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner’s contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

C. When Owner is performing other work at or adjacent to the Site with Owner’s employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor’s failure to take reasonable and customary measures with respect to Owner’s other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor’s failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor’s actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER’S RESPONSIBILITIES

9.01 Communications to Contractor
   A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 Replacement of Engineer
   A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer’s status under the Contract Documents shall be that of the former Engineer.

9.03 Furnish Data
   A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 Pay When Due
   A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 Lands and Easements; Reports, Tests, and Drawings
   A. Owner’s duties with respect to providing lands and easements are set forth in Paragraph 5.01.
   B. Owner’s duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
   C. Article 5 refers to Owner’s identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 Insurance
   A. Owner’s responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 Change Orders
   A. Owner’s responsibilities with respect to Change Orders are set forth in Article 11.
9.08 Inspections, Tests, and Approvals
A. Owner’s responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 Limitations on Owner’s Responsibilities
A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

9.10 Undisclosed Hazardous Environmental Condition
A. Owner’s responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 Evidence of Financial Arrangements
A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner’s obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 Safety Programs
A. While at the Site, Owner’s employees and representatives shall comply with the specific applicable requirements of Contractor’s safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

10.01 Owner’s Representative
A. Engineer will be Owner’s representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner’s representative during construction are set forth in the Contract.

10.02 Visits to Site
A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during
or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 **Project Representative**

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer’s consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 **Rejecting Defective Work**

A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 **Shop Drawings, Change Orders and Payments**

A. Engineer’s authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

B. Engineer’s authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.

C. Engineer’s authority as to Change Orders is set forth in Article 11.

D. Engineer’s authority as to Applications for Payment is set forth in Article 15.

10.06 **Determinations for Unit Price Work**

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 **Decisions on Requirements of Contract Documents and Acceptability of Work**

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 **Limitations on Engineer’s Authority and Responsibilities**

A. Neither Engineer’s authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer’s review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 Compliance with Safety Program

A. While at the Site, Engineer’s employees and representatives will comply with the specific applicable requirements of Owner’s and Contractor’s safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

1. Change Orders:

   a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.

   b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

2. Work Change Directives: A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive’s effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an
adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. Field Orders: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 Owner-Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer’s recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor’s safety obligations under the Contract Documents or Laws and Regulations.

11.03 Unauthorized Changes in the Work

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on
the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor’s fee for overhead and profit (determined as provided in Paragraph 11.04.C).

C. Contractor’s Fee: When applicable, the Contractor’s fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

   a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor’s fee shall be 15 percent;

   b. for costs incurred under Paragraph 13.01.B.3, the Contractor’s fee shall be five percent;

   c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.04.C.2.a and 11.04.C.2.b is that the Contractor’s fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

   d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

   e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor’s fee by an amount equal to five percent of such net decrease; and

   f. when both additions and credits are involved in any one change, the adjustment in Contractor’s fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.

B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor’s progress.

11.06 Change Proposals

A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under
the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. **Procedures**: Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. **Engineer’s Action**: Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor’s supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer’s inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. **Binding Decision**: Engineer’s decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

B. **Resolution of Certain Change Proposals**: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 **Execution of Change Orders**

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner’s acceptance of defective Work under Paragraph 14.04 or Owner’s correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer’s recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and

4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 Notification to Surety

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor’s responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 Claims

A. Claims Process: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:

1. Appeals by Owner or Contractor of Engineer’s decisions regarding Change Proposals;
2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.

B. Submittal of Claim: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor’s knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. Review and Resolution: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. Mediation:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim
submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator’s fees and costs.

E. Partial Approval: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. Denial of Claim: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. Final and Binding Results: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 Cost of the Work

A. Purposes for Determination of Cost of the Work: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. Costs Included: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers’ compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable
thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

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

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor’s Cost of the Work and fee shall be determined in the same manner as Contractor’s Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:
   a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor’s employees incurred in discharge of duties connected with the Work.
   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
   c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
   d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
   e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
   f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes
other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor’s fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor’s officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor’s principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor’s fee.

2. Expenses of Contractor’s principal and branch offices other than Contractor’s office at the Site.

3. Any part of Contractor’s capital expenses, including interest on Contractor’s capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. Contractor’s Fee: When the Work as a whole is performed on the basis of cost-plus, Contractor’s fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor’s fee shall be determined as set forth in Paragraph 11.04.C.

E. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
B. **Cash Allowances**: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor’s costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. **Contingency Allowance**: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

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

13.03 **Unit Price Work**

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

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

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer’s preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer’s written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.

E. Within 30 days of Engineer’s written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:

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

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

3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.
ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor’s safety procedures and programs so that they may comply therewith as applicable.

14.02 Tests, Inspections, and Approvals

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
2. to attain Owner’s and Engineer’s acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor’s purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor’s expense unless Contractor had given Engineer timely notice of Contractor’s intention to
cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 Defective Work

A. Contractor’s Obligation: It is Contractor’s obligation to assure that the Work is not defective.

B. Engineer’s Authority: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. Notice of Defects: Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. Correction, or Removal and Replacement: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. Preservation of Warranties: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner’s special warranty and guarantee, if any, on said Work.

F. Costs and Damages: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may so do (subject, if such acceptance occurs prior to final payment, to Engineer’s confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner’s evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 Uncovering Work

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer’s observation, and then replace the covering, all at Contractor’s expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer’s request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor’s full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 Owner May Stop the Work

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

B. Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor’s services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner’s representatives, agents and employees, Owner’s other contractors, and Engineer and Engineer’s consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will
include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor’s defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner’s rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

A. Basis for Progress Payments: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. Applications for Payments:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner’s interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor’s legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer’s reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer’s recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer’s observations of the executed Work as an experienced and qualified design professional, and on Engineer’s review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer’s knowledge, information and belief:
a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor’s being entitled to such payment appear to have been fulfilled in so far as it is Engineer’s responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer’s review of Contractor’s Work for the purposes of recommending payments nor Engineer’s recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work, or

   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

   c. for Contractor’s failure to comply with Laws and Regulations applicable to Contractor’s performance of the Work, or

   d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or

   e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer’s opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer’s opinion to protect Owner from loss because:

   a. the Work is defective, requiring correction or replacement;

   b. the Contract Price has been reduced by Change Orders;

   c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

   d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer’s recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. Reductions in Payment by Owner:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
   a. claims have been made against Owner on account of Contractor’s conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor’s conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
   b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
   c. Contractor has failed to provide and maintain required bonds or insurance;
   d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
   e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
   f. the Work is defective, requiring correction or replacement;
   g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
   h. the Contract Price has been reduced by Change Orders;
   i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
   j. liquidated damages have accrued as a result of Contractor’s failure to achieve Milestones, Substantial Completion, or final completion of the Work;
   k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
   l. there are other items entitling Owner to a set off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount
remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner’s refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 Contractor’s Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor’s notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner’s objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner’s use or occupancy of the Work following Substantial Completion, review the builder’s risk insurance policy with respect to the end of the builder’s risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner’s use or occupancy of the Work.
E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 Partial Use or Occupancy

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor’s performance of the remainder of the Work, subject to the following conditions:

1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.

2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder’s risk or other property insurance.

15.05 Final Inspection

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

15.06 Final Payment

A. Application for Payment:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of
inspection, annotated record documents (as provided in Paragraph 7.11), and other
documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously
delivered) by:

   a. all documentation called for in the Contract Documents;
   b. consent of the surety, if any, to final payment;
   c. satisfactory evidence that all title issues have been resolved such that title to all
      Work, materials, and equipment has passed to Owner free and clear of any Liens
      or other title defects, or will so pass upon final payment.
   d. a list of all disputes that Contractor believes are unsettled; and
   e. complete and legally effective releases or waivers (satisfactory to Owner) of all
      Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as
   approved by Owner, Contractor may furnish receipts or releases in full and an affidavit
   of Contractor that: (a) the releases and receipts include all labor, services, material,
   and equipment for which a Lien could be filed; and (b) all payrolls, material and
   equipment bills, and other indebtedness connected with the Work for which Owner
   might in any way be responsible, or which might in any way result in liens or other
   burdens on Owner’s property, have been paid or otherwise satisfied. If any
   Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor
   may furnish a bond or other collateral satisfactory to Owner to indemnify Owner
   against any Lien, or Owner at its option may issue joint checks payable to Contractor
   and specified Subcontractors and Suppliers.

B. **Engineer’s Review of Application and Acceptance:**

1. If, on the basis of Engineer’s observation of the Work during construction and final
   inspection, and Engineer’s review of the final Application for Payment and
   accompanying documentation as required by the Contract Documents, Engineer is
   satisfied that the Work has been completed and Contractor’s other obligations under
   the Contract have been fulfilled, Engineer will, within ten days after receipt of the final
   Application for Payment, indicate in writing Engineer’s recommendation of final
   payment and present the Application for Payment to Owner for payment. Such
   recommendation shall account for any set-offs against payment that are necessary in
   Engineer’s opinion to protect Owner from loss for the reasons stated above with
   respect to progress payments. At the same time Engineer will also give written notice
   to Owner and Contractor that the Work is acceptable, subject to the provisions of
   Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to
   Contractor, indicating in writing the reasons for refusing to recommend final payment,
   in which case Contractor shall make the necessary corrections and resubmit the
   Application for Payment.

C. **Completion of Work:** The Work is complete (subject to surviving obligations) when it is
   ready for final payment as established by the Engineer’s written recommendation of final
   payment.

D. **Payment Becomes Due:** Thirty days after the presentation to Owner of the final Application
   for Payment and accompanying documentation, the amount recommended by Engineer
   (less any further sum Owner is entitled to set off against Engineer’s recommendation,
including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 Waiver of Claims

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor’s failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor’s continuing obligations under the Contract Documents.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 Correction Period

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner’s written instructions:

1. correct the defective repairs to the Site or such other adjacent areas;
2. correct such defective Work;
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner’s written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

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

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
E. Contractor’s obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor’s persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
3. Contractor’s disregard of Laws or Regulations of any public body having jurisdiction; or
4. Contractor’s repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,
and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor’s services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 Owner May Terminate For Convenience

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

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

16.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for
expenses or damage directly attributable to Contractor’s stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

A. Disputes Subject to Final Resolution: The following disputed matters are subject to final resolution under the provisions of this Article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and

2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

B. Final Resolution of Disputes: For any dispute subject to resolution under this Article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 Giving Notice

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 Computation of Times

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

18.03 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.
18.04 Limitation of Damages
A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 No Waiver
A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 Survival of Obligations
A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 Controlling Law
A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 Headings
A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.
SUPPLEMENTAL CONDITIONS

01. GENERAL CONDITIONS:

The "Standard General Conditions of the Construction Contract", Engineers Joint Contract Documents Committee, 2007 Edition, Articles 1 through 17 inclusive, included herein preceding these supplements, is a part of this Contract.

ARTICLE 5 - BONDS & INSURANCE

5.04 B 1& 2 Contractor's protective liability insurance, with minimum limits as follows:

General Liability – $1,000,000 per occurrence;

Damage to rented premises – $100,000 per occurrence;

Personal injury including death – $1,000,000 for each occurrence;

General aggregate – $2,000,000 per project;

Property damage - $100,000 for each and $200,000, for the aggregate for operations.

Contractor's automobile liability insurance (including contractual liability insurance as applicable to the Contractor's obligations under paragraph 6.20) with minimum limits as follows:

Automobile liability – $1,000,000 per occurrence;

Workers compensation – Statutory coverage and $1,000,000 Employers liability limit.

(a) Any exclusion of so-called underground damage to pipes, collapse of structures or damage resulting from explosion or blasting, shall be deleted.

(b) The policy shall provide completed operations coverage, and such coverage shall be maintained by the Contractor for a period of one year from the date of payment of the final amounts owed the Contractor by the Owner, whichever occurs first.
ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.02  Progress Payments

A.  Applications for Payments

1.  Add a sentence after the second sentence stating, “Each payment request shall be accompanied with record drawings showing as-built conditions of all work requested during the pay period.”

ARTICLE 16 - DISPUTE RESOLUTION

16.01  Any dispute arising under this agreement shall first be resolved by utilizing non-binding mediation, however should the dispute not be resolved by this method it shall be heard in the Superior Court of the County in which the owner resides, and the parties consent to jurisdiction and venue in that Court. The parties waive any defense they may have to lack of jurisdiction or improper venue and agree to have all disputes resolved in the Superior Court of the County in which the owner resides.
CITY OF HINESVILLE
M/WBE POLICY DOCUMENTS
FOR
CONSTRUCTION CONTRACTS

ALL M/WBE POLICY DOCUMENTS TO BE
SUBMITTED IN SEPARATE SEALED ENVELOPE
City of Hinesville
Minority and Women Business Enterprise Program
(M/WBE) Policy

I. M/WBE Implementation of the Policy
The city manager of the City of Hinesville (hereinafter referred to as “the City”) or his designee shall implement and administer the City’s M/WBE Policy through the City’s M/WBE Program.

II. Policy Statement
It is the City’s policy to provide minority and women owned and operated business enterprises (M/WBEs) with equal opportunity in the procurement initiative and processes for the purchase of goods and services required for the operation and administrative needs of the City. More specifically, it is also policy to:
A. Ensure the M/WBE Program is narrowly tailored in accordance with applicable law;
B. Ensure that only firms which fully meet the eligibility standards specified in 49 CFR Part 3 are permitted to participate as M/WBEs;
C. Ensure there are no barriers to the participation of M/WBEs in opportunities for contracts with the City.

The M/WBE Program will be administered by the city manager or his designee with support of all other departments of the City that are engaged in the procurement of goods and services. Further, the provisions of the M/WBE Policy shall apply to all contracts and services awarded by the City, subject to the requirements of controlling federal, state, and local laws, except as specifically exempted herein. Special emphasis shall be placed on construction contracts to promote the inclusion of M/WBEs.

III. Purposes and Objectives of the M/WBE Program
The purposes of the City’s M/WBE Program are to:
A. Advocate and promote equal opportunity and access to contracting and procurement opportunities within the City;
B. Develop programs that will increase the participation of M/WBEs in City contract and procurement activities in order to assure equal opportunity;
C. Monitor and assess the utilization of M/WBEs in all City construction contract and procurement activities;
D. Monitor and assess the compliance by contractors with the M/WBE policy on all City construction contracts;
E. Identify M/WBEs and promote their awareness of City contracting opportunities;
F. Support programs that provide assistance and training to less experienced small businesses as well as established small businesses working to expand their present capacity; and
G. Recommend revisions and changes to policies and procedures that are an impediment or barrier to equal opportunity of participation for M/WBEs in City contracting and procurement activities.

The objectives of the City’s M/WBE Program are to:
A. Continue a practice of nondiscrimination in the award and administration of City contracts;
B. Remove barriers to the participation of M/WBEs in City contracts;
C. Assist the development of M/WBEs and their capacities so that they can successfully compete in the market outside of the M/WBE program; and
D. Increase the number of M/WBEs and the volume of their business with the City, so as to approximate their population and market share in a given construction trade business sector.

IV. Definitions

Bid – A written quotation, proposal or offer by a bidder or contractor to perform or provide labor, materials, equipment, supplies or services to the City for a certain price, submitted in response to competitive bidding solicitation by the City.

Bidder – Any person, firm, corporation, partnership or business enterprise that submits a bid or proposal to provide labor, goods or services to the City where funds are expended.

Business Enterprise – A legal entity existing for the purpose of engaging in business for profit, including, but not limited to, a corporation, partnership, individual, sole proprietorship, joint stock company, joint venture or any other private, legally recognized entity.

Certification – The process by which M/WBEs verify their status to the City in order to be considered an M/WBE. Certification is a requirement of all M/WBEs who register as such with the City and is a prerequisite to participation in the M/WBE program.

City and City Limits – The incorporated city limits of the City of Hinesville, Georgia and its annexed boundaries, as the same may be amended from time to time.

Classification – The designation which best describes the ownership (MBE or WBE) of a business enterprise.

Commercially Useful Function - Real and actual service in the discharge of any contractual endeavor, including the execution of a distinct element of work by actually performing, managing and/or supervising the work, in accordance with normal business practices, when the firm receives due compensation for the work performed. A supplier is considered to have performed a commercially useful function when it is a manufacturer or a regular dealer.

Compliance – The condition or status of a general contractor whose bid demonstrates that it complies with the M/WBE contract goals.

Construction – The process of building, altering, repairing, improving or demolishing any public infrastructure or building, or other public improvements of any kind to any public real property. Construction does not include the routine operation, routine repair or routine maintenance of existing structures, buildings or real property.

Contract – Any and all agreements, regardless of what they may be titled, for the procurement of supplies, services, or construction.

Contractor – Any business enterprise that has entered into a contract with the City or an agency thereof.

Control or Controlled – As used in this policy, this term refers to an individual’s relationship with an M/WBE and shall mean to actually possess and exercise the legal authority and power to manage business assets and/or daily operations of the business and to actively and continuously exercise such managerial authority and power in determining the policies and directing the operations of the
business, as opposed to a nominal relationship existing only to create the appearance of minority or woman ownership.

**Exclusive General Contractor/Subcontractor Relations** – Agreements made between or among a general contractor and an M/WBE in which the M/WBE promises not to provide subcontracting quotations to other bidders or potential bidders in exchange for preferential treatment from the contractor. Such practice is prohibited by the City; contractors and M/WBES engaging in such practice risk suspension or debarment from performing or bidding on future City contracts.

**Goal** – The percentage of M/WBE participation on a given project. Goals are established on a per-project basis based on trade type involved and the trade’s history of discriminatory under-participation relative to its market share.

**Joint Venture** – An association between an M/WBE and one or more other firms to carry out a single, for-profit business enterprise, for which the venture will be recognized as partially M/WBE, based on the proportion of M/WBE ownership and participation in the joint venture.

**Minority** – A citizen of the United States or a lawfully admitted resident alien who is a member of any of the following groups:

A. **African American** – All persons having origins in any black racial groups of African descent as well as those identified as Jamaican, Trinidadian, and West Indian;

B. **Asian or Pacific Islander** – All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands. This area includes, for example, China, Japan, Korea, India, the Philippine Islands and Samoa;

C. **Hispanic** – All persons of Mexican, Puerto Rican, Cuban, Central American, South American, Spanish or Portuguese culture or origin, regardless of race;

D. **American Indian and Alaskan Native** – All persons having origins in any of the original peoples of North America and who maintain cultural identification through tribal affiliation or community. This includes Aleuts and Eskimo; and

E. **Other** – All persons belonging to an ethnic or minority group identified by the State of Georgia or the U.S. Supreme Court as a “discrete and insular” minority afforded special protection under the Equal Protection Clause of the U.S. Constitution because of inherent cultural or personal characteristics.

**Minority Business Enterprise or MBE** – An entity or institution that is certified by an entity specified in subsection (IX)(J) as at least 51% owned and controlled by one or more minority individuals, or, in the case of a publicly owned business, at least 51% of the stock is owned by one or more minority individuals. The ownership interest must be real and continuous, and not created solely to meet the minority-owned business or contractor provisions of this policy. This definition shall include educational and other non-profit entities, designated as such under section 501(c) of the U.S. Tax Code, that have a recognized historical association with a minority group.

**M/WBE Compliance Plan** – The document submitted by the general contractor during the prequalification process which demonstrates how the contractor will meet the M/WBE goals of the contract on which it is bidding.

**Non-Compliance** – The status of a bid or bidder who fails to comply with the M/WBE contract goals upon submission of a bid or proposal.
Non-Discrimination Statement – The statement made by a bidder relating to its conduct prior to submission of a bid, as well as after the award of a contract, in which the bidder agrees to:
   A. Follow the policies of the City of Hinesville relating to the participation of M/WBEs.
   B. Undertake measures to ensure the maximum practicable participation by M/WBE; and
   C. Not engage in discriminatory conduct against M/WBEs.

Non-Local Business Enterprise – Any business that does not meet the definition of a “Local Business Enterprise” recited above.

Non-Responsive Bidder – A bidder who has submitted a bid which does not conform in all material respects to the requirements set forth in the invitation for bids.

Prequalification – The process whereby potential bidders submit their qualifications to the City for evaluation to determine if they are capable of performing the work that is being solicited and therefore, eligible to bid on the project or submit a proposal. Prequalification is a prerequisite to submitting bids or proposals, but is not a guarantee of being awarded a contract.

Procurement – The process of buying, renting, leasing or otherwise obtaining or acquiring any real or personal property, supplies, materials, equipment or services.

Professional Services – Services which require licensure as a prerequisite to participation for a profit and which involve predominately mental or intellectual labor and skills, including, but not limited to, architects, engineers, surveyors, doctors, attorneys, and accountants.

Proposed Schedule of Minority Participation – A formal bid document which expresses how a contractor will meet the M/WBE goals of a contract by listing the proposed M/WBE subcontractors and/or suppliers it will use on the City project on which it is bidding.

Purchasing – The buying, renting, leasing or otherwise obtaining or acquiring of any real or personal property, supplies, materials, equipment or services.

Responsible Bidder – A bidder who has the capacity, in all respects, to fully perform the contract and all of its requirements and the demonstrated experience, reliability, facilities, equipment and credit to reasonably assure performance.

Responsive Bidder – A bidder who has submitted a bid which conforms in all material respects to the requirements set forth in the invitation for bids.

Small Business Enterprise Development Program – A program that assists and supports the development of local small and new businesses.

Subcontract – An agreement between the general contractor and another business entity (the subcontractor) for the performance of work that is part of the general contractor’s contract with the City.

Women’s Business Enterprise or WBE – An entity or institution that is certified by an entity specified in subsection (IX)(J) as at least 51% owned and controlled by one or more women, or, in the case of a publically owned business, at least 51% of the stock is owned by one or more women. The ownership interest must be real and continuous, and not created solely to meet the woman-owned business or contractor provisions of this policy.
V. Functions Undertaken by the City’s M/WBE Program
The City will provide the following services to ensure the recognition and utilization of M/WBEs located in the City and Coastal Georgia:
A. Review the M/WBE certifications of firms seeking to be approved by the City as M/WBEs.
B. Maintain a current database of certified M/WBEs and the services they offer. The database of M/WBEs will be made available to the public via the City’s website.
C. Provide support and assistance identifying and contacting certified M/WBEs.
D. Help plan and participate in outreach programs and provide assistance in informing M/WBEs of procurement opportunities with the City and other public sector and private sector entities.
E. Review the City’s bid/proposals, specifications, and plans to ensure they do not limit M/WBE participation. After review, advise the City Council of the availability of M/WBE contract opportunities and assist in setting goals on City projects, contracts, and procurements.
F. Encourage M/WBEs to participate in training programs offered by the City and/or third-party education and training providers.
G. Refer M/WBEs to third party technical assistance providers when appropriate for bonding, financial, and technical assistance.
H. Disseminate, through scheduled meetings and other means, information regarding the City’s contracting opportunities to M/WBE contractors, subcontractors, service providers, and suppliers.
I. Conduct debriefing sessions for M/WBEs in coordination with City staff on the quality of M/WBE participation.
J. Maintain listing of M/WBE, minority and women-focused media.
K. Place notices of City projects with M/WBE, minority- and women-focused media.

VI. Implementation of the M/WBE Policy
The city manager or his designee shall implement and administer the City’s M/WBE Policy through the City’s M/WBE Program.

Several methods may be used to increase the opportunity for M/WBE participation in City contracts. These methods include but are not limited to:
A. Conducting pre-bid conferences
B. Creating and distributing pamphlets/literature on doing business with the City
C. Attending community workshops and meetings
D. Conducting workshops and/or seminars for vendors, general contractors and subcontractors
E. Advertising bids in M/WBE-, minority- and women-focused media
F. Allowing vendors to register on a vendor bid list
G. Establish flexible M/WBE prequalification for vendors and contractors.
H. Establishing participation (utilization) goals on a project by project basis
I. Providing information on access to small business assistance programs
J. Establishing separate goals for minority and gender participation (MBE% and WBE %) based on their availability.
K. Categorizing M/WBE firms by business sector, sub-sector and specialty firms and assessing their relative participation levels to most efficiently achieve the goals of this program by the most narrowly tailored means
L. Providing project management on a project by project basis
VII. **Minority Participation Encouragement Policies**

The M/WBE Participation Policy for the City includes, but is not limited, to the following areas:

A. **Procurement of Construction Services**

The following procedures and contract requirements will be used to ensure that M/WBEs are encouraged to participate on City construction contracts:

1. For all construction projects in excess of $100,000 the project manager will identify M/WBEs which are qualified to submit bids. Based on information gathered, the project manager will send invitations to bid directly to these firms and, on behalf of the City, will make available plans and specifications to the M/WBEs.
2. The City will establish project-specific goals for M/WBE participation based on availability of minority/women subcontractors and minority/women general contractors.
3. The City shall provide trade-specific lists of certified M/WBEs to potential general contractors.
4. The City shall require bidders to submit with their bids the Bidder’s Requirements as detailed in Subsection C, in separate sealed envelopes.

*Submission of the above-mentioned documentation will require contractors to fulfill any M/WBE utilization commitments made. Failure to submit the above documentation shall result in the bid being considered non-responsive, and thereby disregarded.*

B. **Bidder’s Requirements**

1. For all City bids, bidders shall be required to submit with the bid a Non-Discrimination Statement that shall affirm the bidder’s agreement to:
   a. Adhere to City policies relating to the participation of M/WBEs;
   b. Undertake certain measures as provided in this Policy to ensure maximum practicable participation of M/WBEs; and
   c. Not engage in discriminatory conduct of any type against M/WBEs.
2. All construction bidders shall be required to submit, in a separate sealed envelope, a Proposed Schedule of M/WBE Participation, which shall include:
   a. The names and addresses of known M/WBEs that have agreed to perform on the contract;
   b. A description of the work that each M/WBE will perform;
   c. The dollar amount of the participation of each M/WBE; and
   d. A signed commitment to use the M/WBE subcontractor whose participation it submits to meet a contractual goal.

The obligation of the bidder is to make good faith efforts to meet or exceed the M/WBE participation goal for each City contract. If the bidder is unable to meet that goal, it must submit documentation of its good faith efforts to do so. Examples of good faith efforts may be found in 49 C.F.R. 26(c). The Project Manager is responsible for determining whether a bidder who has not met the designated contract goal has documented sufficient good faith efforts to be regarded as responsive. The Project Manager will review all good faith efforts documentation for relevance, legitimacy, and accuracy.

In the event a bid is declared non-responsive as a result of insufficient M/WBE participation and/or insufficient good faith efforts, notice of the bidder’s non-responsive status will be delivered in writing. The bidder may then submit an Appeal for Reconsideration to the office of the city manager within ten (10) business days of receipt of the notification. The Appeal for Reconsideration may consist of additional written documentation or the bidder’s argument for reconsideration. The office of the city manager shall review the Appeal and within ten (10) business days, render a written decision as to the responsiveness or non-responsiveness of the bid.
Submission of the above-mentioned documentation will require contractors to fulfill any M/WBE utilization commitments made. Failure to submit the above documentation shall result in the bid being considered to be non-responsive, and thereby disregarded.

C. Joint Ventures/Subcontracting Participation
Joint ventures and subcontracting may be utilized to create and increase opportunities for participation of M/WBE firms and to improve managerial and technical expertise.

*Joint Ventures:* Where bidders engage in a joint venture for the purpose of satisfying the M/WBE participation goal, the bidder shall demonstrate that the M/WBE joint venture’s participation is real and legitimate. The City shall review and approve all contractual agreements and other supporting documentation to determine the percentage of M/WBE participation. The City shall determine the level of applicable participation resulting from the joint venture based on the above criteria.

*Subcontracting:* A general contractor may use subcontractors to satisfy the project’s M/WBE participation goal provided the subcontractor performs a commercially useful function. In determining whether an M/WBE has performed a commercially useful function, the following will be considered:
1. The nature and amount of work subcontracted;
2. Whether the M/WBE has the skill and expertise to perform the work; and
3. Whether the M/WBE actually performs, manages and supervises the work.

D. Annual Compliance Report
City staff designated by the city manager shall submit an annual report to the city manager for distribution to the Mayor and City Council, detailing M/WBE participation in City contracts for the preceding fiscal year.

The reported information will include, but will not be limited to, the following data:
1. List of all construction services contracts during the reporting period;
2. Total contract costs;
3. MBE Goal: dollar amount and percentage of total contract costs;
4. MBE Actual: dollar amount and percentage of total contract costs;
5. WBE Goal: dollar amount and percentage of total contract costs;
6. WBE Actual: dollar amount and percentage of total contract costs;

E. Compliance
1. It will be the responsibility of the Project Manager to ensure that bids and/or proposals issued by the City adhere to the provisions set forth in this Policy.
2. The city manager or his designee will assume primary responsibility for evaluating compliance with the M/WBE Program on a continuing basis, including all aspects of the Program’s operations, to ensure that the mission and objective are being appropriately addressed and realized.
3. Each City contract will contain a provision requiring compliance with this Policy, including maintenance of records and delivery of all information necessary to document compliance.
4. The Project Manager shall be responsible for the evaluation of good faith effort, required subcontractor information, and all related documentation as required.
5. The Project Manager shall require documentation of all M/WBE pay requests and payments made to M/WBEs.

6. City staff designated by the city manager will monitor and evaluate program performance and compliance. Failure to comply with the M/WBE requirements may result in a recommendation for suspension or debarment of the firms and/or individuals involved.

F. Competitive Bids

Nothing in this policy is to be construed to require the City to award a bid contract to any bidder other than the lowest responsible bidder, to require contractors to award to subcontractors, or to make significant material purchases from M/WBEs who do not submit the best overall pricing to the City.

Notwithstanding the foregoing, projects utilizing state or federal funds will be awarded in accordance with all state and federal rules and regulations.

VIII. Required Contract Clauses

A. Contract Assurance

The City shall require that the following clause be included in every City general contract and subcontract: The general contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The general contractor or subcontractor shall carry out applicable requirements in the award and administration of contracts. Failure by the general contractor or subcontractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the City deems appropriate.

B. Prompt Payment

The City shall require that the following clause be included in every City general contract: The general contractor agrees to pay each subcontractor under this general contract for satisfactory performance of its contract no later than 10 days from the receipt of each payment the general contractor receives from the City. Any delay or postponement of payment from the above-referenced time frame may occur only for good cause following written approval of the City. This clause applies to both M/WBE and non-M/WBE subcontractors.

IX. Monitoring and Enforcement Mechanisms

The Project Managers will monitor and track M/WBE participation through the general contractor, including City and subcontractor reports of payments in accordance with the following:

A. Post-Contract Award

After the contract award, the City will review the award documents for the scope of work each M/WBE and first-tier subcontractor is scheduled to perform, and the dollar value of that work.

B. Preconstruction Conference

The Project Manager and the general contractor, or their representatives, will schedule a preconstruction conference to discuss the work each M/WBE subcontractor is scheduled to perform.

C. Construction Contract Monitoring

The general contractor will provide the Project Manager with the work each M/WBE is responsible for performing. The Project Manager will notify the city manager of suspected violations.
In the event that it is determined that an approved M/WBE firm is scheduled and contracted to perform a designated scope of work that has been subcontracted to an unapproved firm, the Project Manager will notify the general contractor of the apparent discrepancy and potential loss of payment. The Project Manager will investigate and deliver an opinion and recommendation to the general contractor, both subcontractors, and the city manager.

D. Substitution
In the event that a general contractor is compelled to request a substitution of a certified M/WBE with the approval of the M/WBE, a written request must be signed by both parties to the request and delivered to the Project Manager. The Project Manager shall review, investigate, and render a recommendation to the city manager for approval or denial.

In the event that a general contractor is compelled to request a substitution of a certified M/WBE without the approval of the M/WBE, the written request must be signed by the general contractor and delivered to the Project Manager and the M/WBE. The M/WBE shall submit a written statement concerning the request. The Project Manager shall review, investigate, and render a recommendation to both parties and the city manager for approval or denial.

Where substitution of a certified M/WBE is approved by the city manager, the general contractor shall be required, to the extent necessary to meet the contract’s M/WBE goal, to identify another certified M/WBE as a replacement or document its good faith effort to do so within ten (10) business days. Should the general contractor fail to comply, the Project Manager shall issue an order stopping part or all of the general contractor’s work and/or payment until a certified M/WBE is identified or a good faith effort is made. The general contractor’s continued failure to do so will result in breach of contract.

E. Record Keeping and Final Utilization of M/WBEs
The general contractor shall be responsible for the creation and maintenance of the following:
1. The name and business address, regardless of tier, of every M/WBE subcontractor, professional service provider, and vendor of materials and supplies;
2. The date of payment and the total dollar figure paid to each of the firms; and
3. The date work was performed by the M/WBE firm’s own employees along with the corresponding dollar value of the work claimed toward M/WBE goals.

F. Final Report - M/WBE Utilization
Upon the successful completion of the project, contract, or transaction, the general contractor shall submit for approval a summary of the utilization and participation of any and all relevant M/WBEs. This information shall be submitted on the “Project Closeout M/WBE Utilization Report” as provided by the City. This report must be submitted to the city manager and approved prior to the official “closeout” of the project, contract, or transaction. All discrepancies, exceptions, reconciliations, balances, etc. must be satisfied prior to the official closing of the project, contract, or transaction.

G. Overall Goals
Overall goals for M/WBE participation in City contracts have been established. The minimum participation goal for W/MBE firms with City contracts is 10% when there is subcontracting.

H. Contract Goals
Contract goals are established in a manner designed to meet or exceed the overall goal for the fiscal period. Contract goals will be expressed as a percentage of the total amount of a contract.
I. Counting M/WBE Participation
The City will count M/WBE participation in City contracts toward overall and contract goals as provided in the contract specifications for the general contractor, joint venture partner with the general or subcontractor, or vendor of material or supplies.

J. Certification
The City requires that by the date and time of the bid closing all M/WBEs identified for participation in City contracts be certified as such by one of the following agencies or organizations:
City Recognized M/WBE Certification Agencies
1. Chatham County
2. City of Atlanta
3. DeKalb County
4. Fulton County
5. Georgia Department of Transportation
6. Georgia Minority Supplier Development Council
7. Savannah-Hilton Head International Airport
8. U.S. Small Business Administration 89(a) Program

The City reserves the right to, from time to time, add or delete an agency or organization from the list. Additionally, an M/WBE may request that the City consider recognition from an agency or organization unfamiliar to the City.

K. Information Collection and Reporting
1. Monitoring of Payments to M/WBEs
   General contractors are required to maintain records and documentation of payments to M/WBEs or certified M/WBE subcontractors for three years following the performance of a contract with the City. Any authorized representative of the City can request these records be made available for inspection during that time. In particular, payments to M/WBE subcontractors may be reviewed by the City to ensure that the actual amount paid to M/WBE subcontractors equals or exceeds the dollar amounts stated in the schedule of M/WBE participation.

2. Confidentiality
   The City will safeguard from disclosure to third parties any information that may reasonably be regarded as confidential business information, except to the extent that disclosure is required by federal, state or local law.
Approved this 2nd day of August, 2012.

James Thomas, Jr., Mayor

David Anderson, Sr. Council Member

Charles Frasier, Mayor Pro Tem

Keith Jenkins, Council Member

Jason Floyd, Council Member

Kenneth Shaw, Council Member

ATTEST:

Sarah R. Lumpkin, City Clerk
NON DISCRIMINATION STATEMENT

I, ________________________________, hereby certify that

______________________________ will adhere to the City of Hinesville M/WBE policy and

______________________________ undertake measures to ensure maximum practicable participation of M/WBE’s and not engage in discriminatory conduct of any type against M/WBE’s. I understand a copy of the Hinesville M/WBE policy documents may be obtained from Hinesville City Hall at 115 East M.L. King Jr. Drive and City of Hinesville website.

Signature:

__________________________________________

By:_____________________________________

Title:____________________________________

___________________________     ____________________________
Seal          Notary Signature
DBE COMPLIANCE FORM

Job Number: ____________
Project Name: ____________

Prime Contractor and Owners Certifications:

I certify that the information submitted on and with this form is true and accurate and that this firm has met and will continue to meet the conditions of this construction contract regarding M/WBE solicitation and utilization.

_________________________________   ___________________________
Prime Contractor Signature       Date

__________________________________
Printed Name

General Information:

Total Contract Amount: $________________________

Proposed Total MBE: $________________________

Proposed Total WBE: $________________________

Percentage M/WBE: %_________________________       Goal: %_____________________

3
ALL M/WBE’S TO BE USED SHALL BE SHOWN ON THIS FORM:

<table>
<thead>
<tr>
<th>JOB NUMBER</th>
<th>PROJECT NAME</th>
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<table>
<thead>
<tr>
<th>NAME OF PRIME BIDDER/PROPOSER</th>
<th>E-MAIL ADDRESS</th>
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<tr>
<th>TELEPHONE NO.</th>
<th>FAX NO.</th>
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</table>

The following subcontractors will be used on this project:

<table>
<thead>
<tr>
<th>COMPANY NAME, ADDRESS, PHONE NUMBER, AND E-MAIL ADDRESS</th>
<th>TYPE OF WORK TO BE PERFORMED</th>
<th>ESTIMATE DOLLAR AMOUNT</th>
<th>CURRENTLY CERTIFIED AS AN MBE OF WBE?</th>
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I certify under penalty of perjury that the forgoing statements are true and correct. In the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302(c).

_________________________________________            ________________________________
Signature of Prime Contractor                                            Date

_________________________________________          ________________________________
Print Name                                                                          Title
NON COMPLIANCE FORM

In the event that the City’s M/WBE goals have not been met the Contractor must demonstrate a good faith effort to meet the goal or that subcontractors are not being used on the project:

_____________________________, will not utilize any subcontractors on ______________________ and understand that in the event that subcontractors are needed the M/WBE policy will still apply.

_____________________________, has made a good faith effort to meet the City’s M/WBE goals but have been unable to do so. Good faith efforts are defined in the Hinesville M/WBE policy as those that meet or exceed the good faith efforts described in 49 C.F.R 26(c). The chart below shall be filled out demonstrating a summary of good faith efforts.

<table>
<thead>
<tr>
<th>M/WBE Contractor Contacted</th>
<th>Date</th>
<th>Method of Communication</th>
<th>Responded to Solicitation?</th>
<th>Reason for non-use</th>
<th>If financial list percentage increase of total cost</th>
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<tbody>
<tr>
<td>1</td>
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<td>Y / N</td>
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<td>Y / N</td>
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</table>

_____________________________
Signature
M/WBE CONTRACTOR COMPLIANCE TRACKING FORM

PROJECT NAME: ________________________________
PROJECT NO: ______________________
CONTRACTOR: ________________________________
DIVISION NO: ______________________
FOR PERIOD ENDING: ____________________________
M/WBE GOAL: 10.00%

D. M/WBE CONTRACTOR TRACKING

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>CONTRACTOR</th>
<th>WORK COMPLETED</th>
<th>DOLLAR AMOUNT</th>
<th>PERCENT OF TOTAL CONTRACT</th>
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<tbody>
<tr>
<td>1</td>
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TOTAL M/WBE DOLLARS SPENT

HAS THE ESTIMATED M/WBE GOALS CHANGED FROM THE TIME OF BID?  YES  NO
WILL THE M/WBE GOALS BE MET BY PROJECT COMPLETION?  YES  NO

Contractor certifies the statements above by signing.
Please submit a “negative” report even if $0 is the amount paid to MBE/WBE subcontractors during the reporting period.

<table>
<thead>
<tr>
<th>PROJECT CLOSE-OUT FORM</th>
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<tbody>
<tr>
<td><strong>1. PRIME CONTRACTOR</strong></td>
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<tr>
<td><strong>3. Submit to:</strong></td>
</tr>
<tr>
<td>P.C. SIMONTON &amp; ASSOCIATES, INC.</td>
</tr>
<tr>
<td>P.O. BOX 649</td>
</tr>
<tr>
<td>HINESVILLE, GA 31310</td>
</tr>
<tr>
<td>PHONE NUMBER: 912-368-5212</td>
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<tr>
<td>FAX: 912-368-6071</td>
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<td><strong>5. TOTAL CONSTRUCTION AMOUNT:</strong></td>
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<tr>
<td>$MBE________________</td>
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<tr>
<td>NEGATIVE REPORT ($0)_______</td>
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<td><strong>7. RECIPIENTS’S MBE/WBE GOALS</strong></td>
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<tr>
<td>M/WBE 10.0%</td>
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<td><strong>9. SIGNATURE OF PRIME CONTRACTOR REPRESENTATIVE</strong></td>
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<tr>
<td><strong>TOTAL MBE/WBE PAYMENTS MADE DURING THIS PROJECT</strong></td>
</tr>
<tr>
<td>NAME &amp; ADDRESS of DBE (SUB)CONTRACTOR (indicate if MBE or WBE firm)</td>
</tr>
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</tbody>
</table>
PART 1 - GENERAL

1.01 COMMENCEMENTS AND PROSECUTION OF WORK

A. Contract time shall begin at which time the Owner will issue a written Notice to Proceed. The Contractor must commence construction within ten (10) days of issuance of a written Notice to Proceed. The Contractor shall maintain sufficient labor and supervision on the job until all items have been completed and the Engineer's Final Certification has been issued.

1.02 COOPERATION

A. The General Contractor and Sub-Contractors shall cooperate with one another and with other Contractors doing related work, and shall coordinate their work with the work of other trades and other Contractors so as to facilitate the general progress of the work. Each trade shall afford all other trades and all other Contractors every reasonable opportunity for the installation of their work and for storage of their materials.

1.03 SANITARY FACILITIES, TEMPORARY

A. Do not allow any sanitary nuisances to be committed in or about work; enforce sanitary regulations of Local and State Health authorities.

1.04 SITE EXAMINATION OF EXISTING CONDITIONS

A. The Contractor, in undertaking the work under this Contract, is assumed to have visited the premises and to have taken into consideration all conditions which might affect his work. No consideration will be given any claim based on lack of knowledge of existing conditions, except where the Contract Documents make definite provisions for adjustment of cost or extension of time due to existing conditions which cannot be readily ascertained.

1.05 SPECIFICATIONS EXPLANATION

A. Attention is directed to the fact that the detailed specifications and separate sections may be written in short or abridged form. In regard to every section of the specifications and all parts thereof, mentioned therein or indications on the drawings or articles, materials, operations or methods require that the Contractor:

1. Provide each item mentioned and indicated (of quality or subject to qualifications notes).

2. Perform (according to conditions stated) each operation prescribed.

3. Provide therefore all necessary labor, equipment and incidentals.

B. Wherever in these specifications or on the drawings the words "directed", "required", "ordered", or words of like import are used, it shall be understood that the directions, requirements, permission or order of the Engineer is intended; and similar words
"approved", "accepted", "satisfactory", or words of like import shall mean approved, acceptable to, or satisfactory to the Engineer.

C. For convenience of reference and to facilitate the letting of Contracts or Sub-Contracts, these specifications are separated into titled sections. Such separation shall not, however, operate to make the Engineer an arbiter to establish limits to the Contracts between the Contractor and Sub-Contractors, nor shall such operation be interpreted as superseding normal union functions.

D. Notwithstanding the appearance of such language in the various divisions of the specifications as "The Electrical Contractor", "The Roofing Contractor", etc., the Contractor is responsible to the Owner for the entire Contract and the execution of all work referred to in the Contract Documents.

1.06 STANDARD

A. Wherever reference is made to the standard specifications of nationally known organizations and specific articles, sections, divisions, or headings are not given, such specifications shall apply in full. Standard specifications where included herein by abbreviation or otherwise shall form a part of this specification the same as if quoted in full.

B. The Engineer may require, and the Contractor shall furnish if required to do so, certificates from manufacturers to the effect that the products or materials furnished by them for use in the work comply with the applicable specified requirements for the materials or products being furnished.

1.07 TELEPHONE, TEMPORARY

A. Contractor shall install and maintain at his expense a job telephone for duration of the Contract.

1.08 TEMPORARY UTILITIES

A. Contractor shall furnish water, electricity, and heating fuel necessary for construction. Contractor shall provide necessary temporary piping, faucets, valves, wiring, switches, outlets, etc., to carry services to the work. The Contractor shall make all temporary utilities connection for his own use and remove temporary services on completion of Contract.

1.09 WORK OUTSIDE OF THE PROPERTY LINE

A. All work outside of the property line called for by the Contract Documents shall be performed by the Contractor and all cost for same shall be included in the Contract.

1.10 AS-BUILT DRAWINGS

A. The Contractor shall, upon completion of the work, furnish a marked set of drawings showing field changes affecting the various mechanical trades, utilities and electrical, as actually installed and as specified under those sections of the specifications, and deliver them to the Engineer. Engineer will furnish prints to Contractor for marking.
1.11 LIQUIDATED DAMAGES

A. Substantial Completion - If the Contractor neglects, fails or refuses to achieve Substantial Completion of the work by not later than 12 P.M. (Midnight), the Contractor shall pay to the Owner, Liquidated Damages in the amount of three hundred dollars ($300.00) per calendar day for each and every day that the Contractor is in default after the date indicated on the Notice to Proceed.

B. Final Completion - If the Contractor neglects, fails, or refuses to complete the work by not later than 12 P.M. (Midnight), the Contractor shall pay to the Owner, Liquidated damages, in the amount of three hundred dollars ($300.00) per calendar day for each and every day that the Contractor is in default after the date indicated on the Notice to Proceed. Liquidated Damages for Substantial Completion and Final Completion are cumulative.

1. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such an event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current Progress Payment should the construction progress fall behind schedule.

2. Time is of the essence of each and every portion of this Contract and of the specification wherein a definite and certain length of time is fixed for the performance of any act whatsoever, and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this Contract.

3. Extensions of time applies to Liquidated Damages only and shall be allowed only for conditions over which the Contractor has no control, such as acts of God, transportation strikes affecting delivery of materials or equipment which are used in the project, manufacturing strikes affecting the production of materials or equipment which are used in the project, and weather above and beyond the normal expected loss of time based on historical climatological conditions over the last 10 years. For any time requested over what should be expected based on historical climatological conditions the amount of rain or temperature must meet the following conditions. To get credit for delays due to temperature the temperature must be at a level that would prevent construction in accordance with the other sections in these specifications. In order to get credit for rain delay the rain event must be persistent for more than four hours during that day and rainfall must be in excess of 0.5” for that 4 hour period or more than 1” during the day.

1.12 MATERIALS PRIOR APPROVAL AND SUBSTITUTIONS

A. Where items of equipment and/or materials are specifically identified herein by a manufacturer's name, model or catalog number, only such specific item may be used in the base bid, except as hereinafter provided.

B. If Contractors wish to use items of equipment and/or materials other than those specifically identified in the Specifications, Contractor shall apply in writing to the Engineer for approval of substitution at least seven (7) days prior to opening of bids, submitting with his request for approval complete descriptive and technical data on the item(s) he proposes to furnish.
C. Approved substitutions will be listed in an addendum issued to all General Contractors prior to opening of bids.

D. Unless requests for changes in the Specifications are approved prior to the opening of bids, as defined above, the successful Contractor will be held to furnish specified items. After contract is awarded, changes in specifications will be made only as defined under "Substitution of Equipment".

1.13 SUBSTITUTION OF EQUIPMENT AND MATERIALS

A. After execution of contract, substitution of equipment and/or materials other than those specifically named in the Contract Documents will be approved by the Engineer for the following reasons only:

1. That the equipment or material is no longer available.

2. That the equipment or material does not perform the function for which it was intended.

3. That the equipment or material cannot be delivered due to conditions beyond the Contractor's control.

B. To receive consideration, requests for substitutions must be in writing accompanied by documentary proof of equality, and difference in price and delivery, if any.

C. In case of a difference in price, the Owner shall receive all benefit of the difference in cost involved in any substitutions, and the contract altered by change order to credit the Owner with any savings so obtained.

1.14 INSPECTING AND TESTING OF MATERIALS

A. Wherever in these Contract Documents inspecting and testing of material is called for, the selection of bureaus, laboratories and/or agencies for such inspecting and testing shall be made by the Engineer, and the character of the test shall be stipulated by the Engineer. Documentary evidence satisfactory to the Engineer that the materials have passed the required inspection and tests must be furnished in quadruplicate to the Engineer by the bureau, agency or laboratory selected. Materials satisfactorily meeting the requirements of the inspection or tests shall be approved by the Engineer and the Contractor notified of the results. The cost of such inspecting and testing shall be paid for by the Contractor.

1.15 ON SITE TESTING AND INSPECTING

A. Wherever in these Contract Documents testing or inspecting is called for, the selection of bureaus, laboratories and/or agencies for such testing or inspecting shall be made by the Engineer. Documentary evidence satisfactory to the Engineer that the materials have passed the required tests or inspection shall be furnished in quadruplicate to the Engineer. The cost of such tests and inspection shall be paid for by the Contractor.
1.16 MEASUREMENTS AND DIMENSIONS

A. Before ordering materials or doing work which is dependent for proper size of installation upon coordination with site conditions, the Contractor shall verify all dimensions by taking measurements at the site and shall be responsible for the correctness of same. No consideration will be given any claim based on differences between the actual dimensions and those indicated on the drawings. Any discrepancies between the drawings and/or specifications and the existing conditions shall be referred to the Engineer for adjustment before any work affected thereby is begun.

1.17 SHOP DRAWINGS

A. Shop drawings shall be dated and contain: Name of project; description and names of equipment, materials, and items; and complete identification of locations at which material or equipment is to be installed, reference to the section of the specifications where it is specified and drawings number, where shown. In addition to the above, the Shop drawings shall: (1) show complete information for checking and for fabrication, installation and erection, without reference to other drawings or note; (2) shall be of drafting line work and lettering that is easily readable under field conditions; (3) have plane oriented the same as plans on the Contract Drawings; (4) list grade, class, or strength of materials; (5) be checked and initialed by the suppliers drafting room checker; (6) be checked and coordinated with other phases of the work, by a person in the Contractor's employ who is experienced and qualified in the checking and coordination of shop drawings.

B. Shop drawings shall not, after having been submitted, be later issued with revised or additional materials, except for items corrected during the checking by the Contractor or reviewed by the Engineer.

C. The following notation will be used by the Engineer in his review.

1. No exceptions taken. (If checked here, fabrication may be undertaken. Approval does not authorize change to contract sums unless stated in a separate letter or by change order.)

2. Note markings. (If checked here, fabrication may be undertaken. Contractor is to coordinate markings noted.)

3. Revise and resubmit.

4. Rejected.

5. Engineer review is for conformance with the design concept of the project and compliance with the information given within the Contract Documents only. The Contractor is responsible for dimensions being confirmed and correlated at the site; for information that pertains solely to the fabrication processes or to means, method, techniques, sequence, and procedures of construction; and for coordination of the work of all trades.

6. Failure to note a noncompliance will not prevent later rejection when the noncompliance is disclosed.
D. Submission of Shop drawings shall be accompanied by a transmittal letter in duplicate, containing project name, Owner's project number, Contractor's name, and number of drawings, title and other pertinent data.

E. The Contractor shall promptly submit to the Engineer, five copies for Architectural items and six copies for Engineering items, required by the Contract Documents in accordance with the aforesaid schedule so as to cause no delay in his work or in work of any other Contractor.

F. For standard items not requiring special shop drawings for manufacture, submit six copies of manufacturer's product data showing illustrated cuts of the items to be furnished, scaled details, size dimensions, performance characteristics, capabilities, wiring diagrams, control and all other pertinent information.

G. The Contractor shall: (1) check, coordinate, correct, stamp, date, and sign all copies of each drawing, and deliver them to the Engineer for his review; (2) identify the set of drawings he has checked; this set shall be shown by checked marks or correction that every item has been verified and with the requirements of the Contract Documents.

1.18 MAINTENANCE MANUAL

A. Contractor shall, prior to completion of contract, deliver to the Engineer, three copies of manual, assembled and bound with a hard cover, for the Owner's guidance, full details for care and maintenance of visible surfaces and of equipment included in contract.

B. Contractor shall, for this manual, obtain from subcontractor, literature of manufacturers relating to equipment, including motors; also furnish cuts, wiring diagrams, control diagrams, instruction sheets and other information pertaining to same that will be useful to Owner in overall operation and maintenance.

C. Where the above described manuals and data are called for under separate sections of the specifications, they are to be included in the manual description in this article.
SECTION 01150
MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 QUANTITIES

A. Quantities: Quantities listed in the Proposal are approximate only and are intended to serve as a guide in comparing bids, and may be increased or decreased without invalidating the unit price bid.

B. Payment: Contractor shall be paid for actual in place quantities as determined by the Engineer field measurements.

C. Discrepancies: In case of discrepancies between the figures shown in the unit prices and totals, the unit prices shall apply and the totals shall be corrected to agree with the unit price.

PART 2 - MEASUREMENT AND PAYMENT

2.01 CLEARING & GRUBBING

A. Measurement: Measurement shall be made on the basis of the percentage complete of the task in accordance with the plans and specifications.

B. Payment: Payment will be made at the lump sum stated in the bid. The price bid shall include furnishing all labor, materials and equipment necessary to complete this item. Work shall include, but is not limited to, removal of all trees, shrubs and undergrowth that presently exist, preventing the construction of this project. All material removed including vegetation, roots and organic mat shall be removed from the site and disposed of at a permitted site. The contractor shall take special care not to disturb the roots of trees that are marked to remain. Trees to be saved shall be marked and approved by the engineer prior. Trees to be saved shall have the appropriate tree protection installed.

2.02 GRADING

A. Measurement: Measurement will be made on the basis of the percent complete of the item of work. All cut and fill quantities are based on the difference between initial topographic data and proposed contours shown on the plans.

B. Payment: Payment will be made at the price bid for each item. Work shall include all equipment, labor and material to complete each task. This item will include, but is not limited to, excavation, material transportation and placement, grading to the lines and grades shown on the plans, compaction and stabilization.
2.03 CURB AND GUTTER, VALLEY GUTTER & CONC. BANDS

A. Measurement: Measurement will be made on the basis of each linear foot of curb and gutter installed to the lines and grades shown on the plan. The size of the curb and gutter will be shown on the plans and indicated on the bid documents.

B. Payment: Payment will be made on the basis of the unit price stated in the bid. The price shall include all materials, labor and equipment necessary to complete the installation. Work shall include, but is not limited to, all excavation, forming, grade staking, compaction, curb and gutter installation, dewatering, form wrecking, cleanup and surface restoration.

2.04 GRANITE ROADWAY BASE

A. Measurement: Measurement shall be made on the basis of the number of square yards of graded aggregate base applied to the parking lot and roadway at the specified thickness as shown on the construction plans. Irregular areas such as turnouts, filler strips and intersections will be measured to the closest square yard. Prior to installation of the asphalt all areas will be checked for proper thickness.

B. Payment: Payment will be made on the basis of the number of square yards of granite crusher run (graded aggregated) base at the specified thickness applied to the roadway at the unit price stated in the bid. The price shall include all labor, equipment and material to complete the task. Work shall include, but not be limited to, the furnishing, hauling, placing and compaction of the crusher run base in order to bring the base to the lines, grades, and cross sections shown on the construction plans or established by the Engineer.

2.05 ASPHALT PAVING

A. Measurement: Measurement will be made on the basis of each square yard of asphalt in place, in accordance with the construction plans and accepted by the Engineer. Actual weight will be determined by weighing on a certified motor truck scale and presenting a notarized copy of the recorded weight to the Engineer to match square yards to tonnage.

B. Payment: Payment will be made on the basis of the number of square yards of asphalt in place in accordance with the unit price bid as stated in the contract. Work shall include, but is not limited to, the furnishing, hauling, placing and compaction of the asphalt in order to bring the pavement to the lines, grades and cross sections as designated on the construction plans and as determined by the Engineer. The unit price bid shall also include surface cleaning, prime, tack and pavement striping. All striping will be in accordance with MUTCD and local specifications.
2.06 DRAINAGE PIPE

A. Measurement: Measurement will be made on the basis of each linear foot of drainage pipe installed at the elevation, grade and alignment as designated on the construction plans.

B. Payment: Payment will be made on the basis of each linear foot of drainage pipe installed at the elevation, grade and alignment as designated on the construction plans at the unit price bids as stated in the contract. Work shall include, but not be limited to, all excavation, trenching, necessary shoring and sheeting, all pipe bedding, furnishing and installing pipe, backfill, compaction, complete surface restoration and cleanup.

2.07 DRAINAGE STRUCTURE (Catch Basins, Yard Drain, Junction Box, Headwall, Concrete Flumes, Flared End Section, Pipe End Treatments, Interference Box, Outlet Structures)

A. Measurement: Measurement will be made on the basis of each drainage structure installed at the elevation and location designated on the construction plans.

B. Payment: Payment will be made on the basis of each structure installed at the unit price bid. The unit price bid shall include furnishing all labor, materials and necessary equipment to complete the item of work. Work shall include, but not be limited to, excavation, necessary shoring and sheeting, dewatering, forming, form wrecking, foundations as required, furnishing and installing the structure, placement of grates, manhole rings and covers as applicable, grouting around pipe, 6” stub for future underdrain connection, backfill, compaction, grading, complete surface restoration and cleanup.

2.08 SILT FENCE

A. Measurement: Measurement shall be made on the basis of each linear foot of silt fence installed in accordance with the Plans, Specifications and “The Manual for Erosion and Sediment Control in Georgia”.

B. Payment: Payment will be in accordance with the price stated in the bid. The unit price shall include all equipment, labor and materials necessary to prevent erosion from the site. Work shall include, but not be limited to, excavation, trenching, post and fabric installation, backfill, daily inspection, re-installation of failed sections, sediment removal once its one half original height of fence. Once final stabilization has occurred, removal and disposal of fence and surface restoration of remaining disturbed area. All silt fence locations shall be approved by the Engineer prior to installation. No payment will be made for silt fence installed without approval of Engineer.

2.09 SEDIMENT TRAPS

A. Measurement: Measurement shall be made on the number of traps installed, maintained and removed after disturbed area is stabilized.
B. Payment: Payment will be made at the unit price bid for each installation. Price shall include all labor, equipment and materials to complete the task successfully. Work shall include, but is not limited to, excavation, dewatering, placement of the sediment trap including cleaning of sediment after each rain event, removal of the trap once all construction is complete, final cleanup and stabilization.

2.10 RIP RAP (Outlet Protection)

A. Measurement: Measurement shall be made on the basis of the square yards of rip rap at the depth noted, placed at the locations shown on the plans and in accordance with “The Manual for Erosion and Sediment Control in Georgia”.

B. Payment: Payment will be made at the unit price bid. The unit price bid shall include all material, labor and equipment necessary to accomplish the task. Work shall include, but not be limited to, excavation, grading, furnishing and placing rip rap, gravel filler, geotextile filter blanket as shown on the plans to cover area entirely avoiding washouts in the future. Thickness of rip rap coverage will be at least the thickness shown on the plans for each location, but in no case shall be less than 1.5 times the rock diameter.

2.11 GRASSING

A. Measurement: Measurement shall be made on the basis of the completed item in accordance with the construction plans and bid items.

B. Payment: Payment will be made in accordance with the price stated in the bid. The unit price shall include, but is not limited to, furnishing all labor, materials and equipment necessary for the satisfactory growth of grass on all disturbed areas in accordance with plans and specifications. Work shall include, but not be limited to, furnishing all materials; fertilizer, soil samples, grass seed, raking, leveling, watering, maintenance and final surface restoration. Final payment will not occur until permanent grass is established.

2.12 PAVEMENT STRIPING, MARKINGS & SIGNAGE

A. Measurement: Measurement will be made based on the basis of the completed item. No percentage measurements will be allowed.

B. Payment: Payment will be at the price bid in the proposal. Payment shall include all labor, equipment and material requirement to complete the task. Work shall include but is not limited to, layout of the pavement markings, striping, sign post, concrete fill and all signs required to meet MUTCD requirements for the entire project.
2.13 CONSTRUCTION EXIT

A. Measurement: Measurement will be based on the number of construction exits installed and maintained for the duration of the project as shown on the construction plans.

B. Payment: Payment will be made at the unit price bid; based on the progress of the project. 100% payment will not be made until the project is complete and the exit is removed. Work shall include, but is not limited to, excavation, furnishing and installing filter fabric, furnishing and installing stone, maintaining and refreshing the stone during construction period to insure proper operation of the construction exit.

2.14 MOBILIZATION

A. Measurement: Measurement will be made on the basis of establishing construction yard and significant progress in beginning the project. Mobilization will be limited to 5.0% of the bid price.

B. Payment: Payment will be made at the price bid. The lump sum price shall include establishing the construction yard, beginning work and providing the owner with copies of all insurance certificates, bonds and meeting all general condition requirements.

2.15 FENCE PLUS STRUCTURE RELOCATION AND REMOVAL

A. Measurement: Measurement shall be made on the basis of the percentage complete of the task in accordance with the contract.

B. Payment: Payment will be made at the lump sum price bid. The bid price shall include all labor, material, and equipment necessary to complete the task. Work shall include, but is not limited to, removal or relocation of all mail boxes, signs, collection boxes, monuments, or incidental items that may require removal or relocation as a result of the project. The scope shall include concrete footers, concrete post supports, miscellaneous metals or support structure that may be a part of the facility.
SECTION 02100
CLEARING AND GRUBBING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Clearing shall consist of the felling, trimming, cutting and disposal of trees and other vegetation designated for removal, including down timber, snags, brush and rubbish occurring within the area to be cleared. Grubbing shall consist of the removal and disposal of stumps, roots larger than 1.5 inches in diameter and matted roots.

PART 2 - EXECUTION

2.01 Trees, down timber, stumps, roots, brush and other vegetation in areas to be cleared shall be removed completely, except such trees and vegetation as may be indicated or directed to be left standing. Trees to be left standing within the cleared areas shall be trimmed of dead branches 1.5 inches or more in diameter.

2.02 Limbs and branches to be trimmed shall be neatly cut close to the bore of the tree or main branches. Cuts more than 1.5 inches in diameter shall be painted with commercial tree-wound paint.

2.03 All organic materials, masonry, concrete or metallic debris in the clearing and grubbing areas shall be excavated and removed to a depth of not less than 12 inches below grade where original grade is to remain level and two feet below finish grade. All material shall be removed when under pavement base and bottom of footings.

2.04 Depressions made by grubbing shall be backfilled and compacted with fill material to meet the requirement for trenching and structural backfilling.

2.05 Machine grubbing shall not be done under trees left standing in the area covered by the branches, nor in any manner which might damage the trees or any new work.

2.06 Trees and vegetation to be left standing shall be protected from damage during clearing, grubbing and construction operations, by the erection of barriers.

2.07 Damages caused by the execution of clearing and grubbing shall be paid for by the Contractor.

2.08 Objects above or below grade interfering with construction to be removed as directed by the Engineer.

2.09 Disposal of Materials

A. Cleared and grubbed materials to be disposed of to an approved off-site disposal area.

B. On site burning will not be allowed, without written permission of local authorities.
SECTION 02210
SITE GRADING

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

A. Reference Standards:

1. Standards of American Society for Testing and Materials:
   ASTM-D-698 Moisture-Density Relations of Soils Using 5.5 lb. (2.5 KG) Hammer and 12 inch (304.8 mm) Drop


1.02 TESTING

A. All soil testing shall be performed by an Independent Testing Laboratory selected by the Engineer and paid for by the Contractor.

1.03 EXCESS EXCAVATED MATERIALS

A. Excess excavated materials shall be wasted off site by the Contractor at no expense to Owner, or as directed by the Engineer.

1.04 BORROW MATERIAL

A. Any borrow material required to accomplish all levels, lines and grades indicated shall be furnished by the Contractor at no expense to the Owner.

B. Borrow material shall be obtained from borrow pits off site.

C. The Contractor shall pay for all soil analysis for borrow material.

1.05 EXCAVATED MATERIAL

A. All material to be excavated shall be classified as earth.

1.06 UNSUITABLE BEARING MATERIALS

A. Should unsuitable bearing materials be encountered at levels indicated and found to have insufficient bearing values the Engineer may order the excavation carried to lower depths.

B. Compensation for the removal and/or replacement of unsuitable materials shall be in accordance with the General Conditions, Article 10.01.

C. Excavation of unsuitable bearing materials shall not proceed until the conditions have been observed by the Engineer and written approval has been given by the Owner.
PART 2 - EXECUTION

2.01 TOP SOIL

A. Areas to be stripped shall first be scraped clean of all brush, weeds, grass, roots and other material.

B. Remove topsoil from areas to be graded and stockpile in locations where it will not interfere with structures, roads or utility operations.

C. Topsoil shall be free from subsoil, debris and stones larger than 2 inches in diameter. The stored topsoil shall be left in piles to be used for finished grading.

D. Stockpiles shall be protected from contamination by undesirable foreign matter and shall be graded to shed water.

2.02 EXCAVATION

A. Excavations shall be accomplished to bring surface to the levels, lines and grades as indicated.

B. Excavated material to be used for fill or backfill material shall be stockpiled on the site as directed by the Engineer. Stockpiles shall be graded to shed water.

2.03 FILLING

A. All fill material required to bring areas to the levels, lines and grades indicated shall be selected and approved materials from approved borrow areas.

B. Sub-grades on which fill material is to be placed shall be scarified to a depth of not less than 4 inches by plowing or discing. A layer of suitable fill material, approximately 3 inches in depth, shall be spread over the scarified surface and compacted.

C. Fill material shall be spread and compacted in successive uniform layers not exceeding 8 inches in depth (loose measure) until the total thickness of fill is completed.

2.04 COMPACTION

A. Compaction required for material fill shall be 95% of Standard Proctor, maximum dry density as determined by the procedures of ASTM D-698. Fill areas shall be crowned and sloped to drainage ditches or as required to prevent ponding of surface water.

B. Compaction by flooding of any material is not acceptable. In the event that any flooding takes place, the material and all adjacent softened material shall be removed and replaced with compacted fill at no cost to the Owner.
2.05 FINISH GRADE

A. Distribute topsoil evenly to levels, lines and grades shown.

B. Finish grade to be trimmed and raked true to line and grade to avoid surface ponding.

C. Remove stone two inches or greater in diameter and debris from soil.

D. Finish grade tolerance to +/- 0.05 foot for roadways and +/- 0.10 foot for other areas.
SECTION 02221
TRENCH EXCAVATION, BACKFILL AND COMPACTION

PART 1 - GENERAL

1.01 SCOPE, STANDARDS & DEFINITIONS

A. Work under this section shall consist of furnishing all materials, equipment and labor for excavation, trenching and backfilling for utility systems. "Utility systems" shall include underground piping and appurtenances for water distribution systems, storm water drains, sewage collection systems, force mains, spray irrigation system and all other pipes and appurtenances shown on the drawings.

B. Applicable Standards and Reference

I. ASTM D2321 Soil Classification and Restrictions

   a. Class IA = Manufactured crushed stone, shell, crushed slag or rock, open graded, clean, large voids, contains no fines, can allow sand migration to create excessive settling. Suitable as drainage blanket.
   b. Class IB = Manufactured aggregate dense graded, clean, crushed stone with sand and gradation present. Closer void so little migration of sand, little fines. Minimal migration of sand. Suitable as drainage blanket.
   c. Class II = Coarse grained soils and sand, graded gravel and sandy mix, minimal migration of silt or sand. Use as drainage blanket and drains limited.
   d. Class III = Coarse grain sand with fines, silty gravel, gravel-sand-silt mixture, clayey gravels, silty sand mixture. Not to be used in the presence of water.
   e. Class IVA = Fine grain soils, inorganic, Inorganic silts and very fine sand, silty clayey fine sands, inorganic clay with minor plasticity. Lean clay. Use only where no water exists and shallow fills.
   f. Class IVB = Fine Grained soils inorganic, micaceous fine sand, silty soil, fat clay, clay with high plasticity. Use requires geotechnical evaluation.
   g. Class V = Organic soils, clay and silt with organics. No permitted use other than top 6" outside roadways for soil amendment for grassing.

1.02 EXISTING UTILITIES

A. Before opening trenches, the Contractor shall examine all available records and explore for the location of all sub-surface pipes, valves or other structures and reference such locations on the surface.

B. In opening trenches, every effort shall be made not to interfere with these utilities structures. Expose existing piping by hand before excavating by machine. Excavate existing utilities sufficiently in advance of pipe laying to determine crossing arrangement. Slight deviations may be permitted in order to clear such structures. The Contractor shall be entirely responsible for the preservation of all underground or overhead utility lines and structures, such as gas, water, sewer lines, telephone conduit, power lines, etc., and shall replace, adjust or repair, without additional compensation, any such lines damaged or interfered with as a result of this construction.
C. Schedule work to keep roads and utilities in usable condition; coordinating all operation with the Owner to avoid inconvenience insofar as practicable.

1.03 EXCAVATED MATERIAL

A. All material to be excavated shall be classified as earth.

1.04 BORROW MATERIAL

A. Any borrow material required to accomplish all levels, lines and grades indicated shall be furnished by the Contractor at no expense to the Owner.

B. Borrow material shall be obtained from borrow pits off site.

C. The Contractor shall pay for all soils analysis for borrow material.

1.05 TESTING

A. All soil testing shall be performed by an Independent Testing Laboratory selected by the Engineer and paid for by the Contractor.

1.06 QUALITY ASSURANCE

A. All excavation within the rights of way of city streets and county, State or Federal roadways, shall be backfilled in accordance with the then prevailing requirements of the Georgia Department of Transportation, Highway Division.


PART 2 - EXECUTION

2.01 GENERAL EXCAVATION

A. The Contractor shall do all excavation of whatever substances encountered to depth shown on plans. Excavated materials not required for fill or backfill shall be removed from site as directed by the Engineer.

B. Contractor is to excavate to provide 3 foot minimum cover over utility.

C. Excavation for manholes and other accessories to have 12 inches minimum and 24 inch maximum clearance on all sides.

D. Excavation shall not be carried below the required level.

E. Where excavation is carried below grades indicated, the Contractor shall refill same to the proper grade with compacted earth or stone, or as directed by the Engineer.

F. Banks of trenches shall be vertical.

G. Width of trench shall be as shown on the plans. The bottom of trench for sewers and culverts shall be rounded so that an arc of the circumference equal to 0.6 of the outside diameter of the pipe rests on undisturbed soil.
H. Bell holes shall be excavated accurately to size by hand.

2.02 UNSUITABLE BEARING MATERIALS

A. Should unsuitable bearing materials be encountered at levels indicated and found to have insufficient bearing values the Engineer may order the excavation carried to lower depth.

B. Compensation for the removal and/or replacement of unsuitable bearing materials shall be in accordance ASTM D2321 requirements.

C. Excavation of unsuitable bearing materials shall not proceed until the conditions have been observed by the Engineer and written approval is given by the Owner.

2.03 PIPE BEDDING

A. The following detail provides trench & pipe zone terminology.

B. The trench floor should be constructed to provide firm, stable, and uniform support for the full length of the pipe. This can be accomplished by bringing the entire trench floor level grade and then creating bell holes at each joint to permit proper joint assembly, alignment and support. Portions of the trench that are excavated below grade should be returned to grade and compacted as required to provide proper support. If native trench soil is not suitable for pipe bedding, the trench should be over excavated and refilled with suitable foundation material either local sandy...
material compacted to 90% Std. Proctor or #57 stone depending on the presence of water and, as approved by the engineer. Bedding material shall be Class IB or II as defined in ASTM D2321. Large rocks or hard material should not be contained in the bedding area (minimum of 4") below the pipe.

C. The most important factor in assuring proper pipe-soil interaction is the haunching material and its density. This material provides the majority of the support that the pipe requires to function properly in regards to deflection and performance. The haunching material shall be placed and compacted under the pipe haunches as shown in the detail above. Proper control should be exercised to avoid deflecting the pipe from proper alignment. The same material that is used for bedding should be used for haunching and compacted to the same standards. Haunching material shall be Class IB or II as defined in ASTM D2321.

D. Initial backfill, as shown in the detail above, shall be accomplished with suitable, compactable material and compacted in 6” layers. Material shall meet the requirements of Class IB II or III as restricted in ASTM D2321.

E. Final Backfill will be accomplished by placing material in 12” lifts and compacting to a level determined by the final use of the area above the pipe. Final backfill in roadways shall require placement of suitable Class IA, IB, II and III backfill material, placed in 12” lifts and compacted to 100% standard proctor (ASTM Test D-698). Final Backfill outside of roadways shall be Class II, III or IVA and lightly compacted to avoid settling in the future. The top 6” of the final backfill, outside of roadways, shall be suitable for establishing a final grassed surface.

F. Material used in the “trench & pipe zone” shall be restricted as per the limitations and restrictions as outlined in ASTM D2321

2.04 BRACING AND SHORING

A. The Contractor shall do all bracing, sheeting and shoring necessary to perform and protect all excavations as required for safety.

B. Sheet ing driven alongside the pipe should be cut off and left in place to an elevation 1.5 feet above the top of the pipe.

C. All other sheeting shall be removed as directed by the Engineer.

2.05 DEWATERING FOR EXCAVATION

A. The Contractor shall pump or remove any water accumulated in any excavated area and shall perform all work necessary to keep excavations clear of water while foundations, structures or any masonry are being constructed or while pipe is being laid.

B. No structure or pipe shall be laid in water, and water shall not be allowed to flow over or rise upon any concrete or masonry or piping until same has been inspected and the mortar or joint material has cured.

C. No extra compensation will be allowed for removal of water.
D. All water pumped or bailed from the trenches or other excavation shall be conveyed to a point of discharge where it will neither cause a hazard to the public health, nor damage to the public or private property, or to work completed or in progress.

2.06 BACKFILL

A. The soil at the sides of a pipe and above it is the backfill.

B. Prior to backfilling any excavation, all piping and structures shall be observed by the Engineer.

C. After pipes have been tested and approved, backfilling shall be done with approved material free from large clods or stones.

D. Backfill shall be placed in uniform layers, four inches thick, on both sides of the pipe and thoroughly compacted with pneumatic or hand tampers. The backfill shall be brought up uniformly on both sides of the pipe and compacted to an elevation of one foot above the top of the pipe, after which the fill shall be placed in eight inch lifts. No rock will be allowed in the backfill within a distance of one foot from the pipe, and rock larger than six inches in the greatest dimension will not be permitted in any part of the trench or backfill.

1. Backfill shall be compacted to not less than 95% of the maximum dry weight per cubic foot as determined by AASHTO Method T-99 (Standard Proctor Test).

2. The top 18 inches of backfill under any paved area shall be compacted to 100% Standard Proctor.

3. Water settling will not be permitted in clay soils. It may be required at the option of the Engineer in sandy soils.

2.07 REPLACING PAVEMENTS

A. Subgrades shall be compacted with a mechanical tamper.

B. The minimum width of replaced concrete pavements shall be 4 feet at interiors and 6 feet at joints and constructed as shown on Standard Details. Avoid cutting pavements at joints; if unavoidable, reconstruct same as original joint. Depth shall be equal to the original thickness. Existing pavements edges shall be cut vertical.

C. Use high-early-strength cement if road is to be opened in less than 3 days.

D. The minimum width of replaced bituminous pavements shall be 3 feet with 8 inch concrete patch. The existing pavement shall be cut vertically and horizontally to a straight line. The 8 inch concrete patch shall be minimum 3,000 psi concrete containing black dye and shall be flush with the existing pavement.
PART 1 - GENERAL

1.01 APPLICABLE STANDARDS

A. Appurtenances shall be constructed in accordance with the referenced Georgia Department of Transportation Standard Drawings.

B. American Society for Testing and Materials (ASTM):

   C-32  Specification for Sewer and Manhole Brick.

   C-76  Reinforced Concrete Culvert, Storm Drain and Sewer Pipe.

   C-144 Aggregate for Masonry Mortar.

   C-270 Mortar for Unit Masonry

   C-443 Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.

   C-913 Specification for Precast Concrete Water and Wastewater Structures

   C-536 Test for Continuity of Coatings in Glassed Steel Equipment by Electrical Testing.

C. Only reinforced concrete pipe will be allowed under roadways or frequently traveled areas.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Roadway Storm Drainage Pipe: Pipe shall be reinforced Concrete Pipe which conforms to ASTM Specification C-76 and shall be of sizes shown. Pipe shall be Class III minimum and as indicated on GA. D.O.T. Standard 1030 D.

B. Non Roadway Storm Drainage Pipe: Pipe shall be one of the following:

   1. Corrugated metal pipe shall conform to AASHTO designation M-36, AREA Manual 1-4 requirements for corrugated metal culverts, or Federal Specification QQ-C-806, with the following applicable requirements:

      a. The outside and inside surfaces of the corrugated metal pipe shall be completely coated with bituminous material with a minimum thickness of 0.05 inch at the crest of the corrugations. Immediately prior to the application of the bituminous coating, the corrugated metal pipe shall be cleaned of all dirt, grease, mill scale, or loose rust and shall be dry.

      b. The outside and inside surfaces of the corrugated metal pipe shall be completely coated with a pure aluminum coating metallurgically bonded by an alloy layer between the steel and the aluminum. The coating shall be
applied at a minimum of 1 oz./sq.ft., 2 mils. each side. The weight of aluminum (total both sides) shall be as follows: Minimum check limit triple-spot test = 1.00 oz/sq feet, minimum check limit single-spot test = 0.90 oz/sq feet. The aluminized steel pipe shall be Armco Aluminized Steel Type 2 or equal.

c. All rivets shall be placed in the inside valley of the corrugations. The interior coating shall be protected against damage from insertion or removal of struts or tie wires. Lifting lugs, where used, shall be so placed as to facilitate moving the pipe without damage to the exterior or interior coating. All lateral pipe shall be sixteen (16) gauge. All pipe under possible traffic areas will be twelve (12) or fourteen (14) gauge as indicated.

d. To facilitate field jointing, the ends of pipes with helical corrugations shall be rerolled to form circumferential corrugations from the end. The diameter of the reformed ends shall not exceed that of the pipe barrel by more than the depth of the corrugation.

2. Polyvinyl chloride (PVC) pipe shall be manufactured and tested in accordance with specification for "Poly (Vinyl Chloride) PVC Large Diameter Ribbed Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter." The pipe and fittings shall be made of PVC plastic and shall have a smooth (not ribbed or corrugated) inside surface.

a. All pipe shall be bell and spigot. The bell shall consist of an integral wall section or an internal plastic sleeve. The solid cross section rubber ring shall be factory assembled on the spigot. Size and dimensions shall be as shown on the plans. Standard laying length shall be 13 feet ±1 inch.

b. All fittings and accessories shall be as manufactured and furnished by the pipe supplier or approved equal and have bell and/or spigot configurations compatible with that of the pipe.

c. Pipes shall be designed to pass all tests described herein at 73° F (± 3° F).

d. The pipe stiffness shall equal or exceed 10 psi when tested in accordance with ASTM D 2412.

3. High density Polyethylene (HDPE) pipe shall be manufactured for use in nonpressure storm sewer. The pipe shall be manufactured to meet AASHTO M294, Type ‘S’ for 12” through 36” and AASHTO MP6-96, Type ‘S’ OR ‘D’ for 42” and 48” pipe. The pipe and fittings shall be made from HDPE material and shall have a smooth (not ribbed or corrugated) inside surface.

a. All pipe shall be bell and spigot. The bell shall be an integral part of the pipe. The joint shall use a gasket to form a water tight connection meeting ASTM D3212. Gaskets shall be installed in the bell or in the spigot by the manufacturer. The use of Silt tight fittings may be requested in lieu of water tight connection if approved by the engineer.

b. All fittings shall conform to AASHTO M294 or MP6-95. Fabricated fittings shall be welded on the interior and exterior at all junctions.

c. Pipe and fittings material shall be high-density polyethylene meeting ASTM D3350.
d. Installation shall be in accordance with ASTM D2321.

e. Pipe may be Advanced Drainage System, Inc., N-12 or N-12 HC or Hancor Sure Lok 10-8 pipe.

f. HDPE end sections are NOT allowed.

C. Pipe Joints:

1. Joints for concrete pipe shall be one of the following types:
   a. Bell and spigot with rubber gaskets.
   b. Tongue and groove with rubber gaskets.
   c. Tongue and groove with preformed plastic gaskets.


3. Field joints of corrugated steel pipe shall maintain pipe alignment during construction and prevent infiltration of side material during the life of the installation. Circumferential and longitudinal strength shall be provided in accordance with the structural joint performance criteria of Division 2, Section 23 of the AASHTO standard specification for Highway Bridges. The bands shall be constructed in such a manner that will effectively engage the pipe ends. Coupling bands shall not be more than 3 nominal sheet thicknesses lighter than the thickness of the pipe to be connected and in no case lighter than 0.052 inches. Bolts and nuts for coupling bands shall conform to the requirements of ASTM Designation: A307. Bands shall be furnished to lock with the circumferential corrugations, including rerolled end helical pipe. The corrugated bands shall be not less than 7 inches wide for diameter 4 to 36 inches, inclusive, and not less than 10 1/2 inches wide for all other pipe diameters.

   NO DIMPLE BANDS WILL BE ALLOWED.

4. Joints for PVC pipe must be an integral bell gasketed joint which forms a silt tight joint.

D. Precast Concrete Manhole Sections:

   ASTM C913, except that spacing of manhole steps or ladder rungs shall not exceed 12 inches.

E. Masonry Manholes: Shall be constructed of the following materials:

1. Brick: ASTM C32, Grade MS

2. Mortar of Masonry: ASTM C279, Type M.

4. Water for Masonry Mortar shall be fresh, clean and potable.

F. METALS

1. Frames, Covers, and Grating: Frames, covers, and grating shall conform to AASHTO M-306-07 and shall be of grey iron castings.

2. Manhole Steps: Manhole steps shall be constructed of a number of 3 reinforcing bar encapsulated in polypropylene plastic with a non-skid tread. Finished dimensions of the steps shall be identical to that of malleable iron manhole steps. Steps to have a minimum tread width of 12 inches.

2.02 DELIVERY AND STORAGE

A. Storm Drainage Pipe: Care shall be exercised in loading and unloading pipe, fittings, specials and castings at all times in order to avoid shock and damage to the materials. Lifting shall be by hoist or by rolling on skids. Dropping will not be permitted. The Contractor shall be responsible for the safe handling of all materials and no damaged materials shall be used in the work. Materials shall be inspected upon arrival at the site, and any damaged or defective materials shall be immediately removed from the site. All materials shall be stored above grade.

B. Cementious Materials: Cementious materials in bags shall be stored in enclosed structures; floors shall be elevated above the ground a distance sufficient to prevent the absorption of moisture.

C. Metal Items: Metal items, including reinforcing steel, shall be stored above grade in a manner which will not cause excessive rusting or coating with grease or other objectionable materials.

D. PVC Pipe: PVC pipe shall be stored protected from sun light by means of covering the pipe or storing inside a building or under a covered shed. Any pipe showing signs of prolonged outside storage (i.e. faded exterior color or signs of drying) shall be rejected.

E. Aggregates: Aggregates shall be stored on areas to prevent the inclusion of foreign material. Aggregates of different sizes shall be stored in separate piles. Stockpiles of coarse aggregate shall be built in horizontal layers not exceeding 4 feet in depth to minimize segregation. Should the coarse aggregate become segregated, it shall be remixed to conform to the grading requirements.

F. Brick, Concrete Masonry Units and Precast Concrete Manholes: Brick, concrete masonry units and precast concrete manholes shall be handled with care to avoid chipping and breakage, and shall be stored to protect them from contact with the earth and exposure to the weather, and shall be kept dry until used. Masonry units or precast concrete containing frost or ice shall not be used.
PART 3 - EXECUTION

3.01 DRAINAGE PIPE

A. Each section of pipe shall be carefully examined before being laid, and defective or damaged pipe shall not be used.

B. Under no circumstances shall pipe be laid in water, and no pipe shall be laid when trench conditions or weather are unsuitable for such work. Diversion of drainage or dewatering of trenches during construction shall be provided as necessary. Pipe shall be laid true to line and grades indicated and shall rest upon the pipe bed for the full length of each section. Runs of pipe shall be laid with outside bells or grooved ends up-grade beginning at the lower end of the pipe line. Pipe having its grade and/or joint disturbed after laying shall be removed, cleaned, and relayed.

C. When pipes are protected by head walls or connect with drainage structures, the exposed ends of the pipe shall be placed or cut flush with the inside face of the structure. After the pipe is cut the rough edges shall be smoothed up in an approved manner. All pipe shall be laid so that markings are on top and the inner surfaces abut neatly, tightly and smoothly.

D. All pipe in place shall be observed by the Engineer before being covered and concealed unless this requirement is waived by the City Inspector and the Design Engineer. Contractor shall clear all pipe of silt debris prior to final acceptance.

3.02 CORRUGATED METAL PIPE JOINTS

A. Corrugated metal pipe shall be butted to form a smooth joint; the space between the pipe and coupling bands shall be kept free from dirt and grit so that the corrugations fit snugly. The coupling band while being tightened shall be tapped with a soft head mallet of wood, rubber or plastic to take up slack and insure a tight joint. Coupling band bolts and damaged areas of the coupling bands and pipe shall be given a coating of bituminous cement. Pipe on which the asphalt coating has been damaged to such extent that satisfactory field repairs cannot be made will be replaced.

3.03 CONCRETE PIPE JOINT

A. Joint installation shall be in accordance with the recommendations of the manufacturer of the joint material. Surfaces to receive lubricants, cements or adhesives shall be clean and dry. Gaskets and jointing materials shall be affixed to the pipe not more than 24 hours prior to the installation of the pipe, and shall be protected from the sun, blowing dust and other deleterious agents at all times. Gaskets and jointing materials shall be inspected before installation of the pipe, and any loose or improperly affixed gaskets and jointing materials shall be removed and replaced.

B. The pipe shall be aligned with the previously installed pipe, and the joint pulled together. If, while making the joint, the gasket or jointing material becomes loose and can be seen through the exterior joint recess when the joint is pulled up to within one inch of closure, the pipe shall be removed and the joint remade.
3.04 MASONRY WORK

A. Mortar for Masonry: Mortar for brick masonry, rubble stone masonry, and for bedding cast iron frames in masonry shall be Type M, conforming to ASTM C270.

B. Mortar for pargetting Masonry Walls: Mortar for pargetting masonry walls below grade shall be Type M, conforming to ASTM C270.

C. Brickwork: Brick in circular walls shall be laid in all header courses to form full and close mortar joints, ends and sides in one operation. Vertical joints shall be radial from the center. Brickwork around pipe inlets and outlets shall not be allowed. Gaps shall be poured with concrete.

D. Masonry Structures: Masonry structure walls shall be constructed of brick, concrete masonry units or precast concrete structural sections.

3.05 PRECAST CONCRETE

A. Walls shall be constructed on a footing of cast-in-place concrete, except that precast concrete base sections may be used for precast concrete structure risers. Precast base sections shall conform to the applicable requirements for precast risers and tops in ASTM C913. Mortar that has hardened to the extent that it cannot be made workable without the addition of water shall not be used. Thickness of parget shall be not less than 1/2 inch. No pargetting will be permitted on the inside of structures. Pargetting will not be required for precast concrete structures. Joint work inside masonry structures shall be smooth.

B. One course of brick work is allowed for leveling and adjustment. All other adjustments must be poured in place concrete with a maximum height of 24 inches.

C. For single and double wing catch basins a concrete pad shall be poured 4 inches thick with a minimum slope of 1” per foot away from the curb and gutter and towards the box.

3.06 METAL WORK

A. Iron and steel shall be formed to shape and size with sharp lines and angles. Shearing and punching shall produce clean true lines and surfaces. Casting shall be sound and free from warp, cold shuts, and blow holes that may impair their strength or appearance. Exposed surfaces shall have a smooth finish and sharp well defined lines and arises. The necessary rivets, lugs, and brackets shall be provided.

3.07 FIELD TEST

A. A light held in a drainage structure shall show a practically full circle of light through the pipe when viewed from the adjoining end of the line.

B. Lines under pavements shall be tested for infiltration by means of a suitable weir or other measurement device as directed by the Owner. When determination of infiltration is not practicable because of dry trench conditions, an exfiltration test shall be applied by filling with water so that the hydraulic head will be at least 6 inches above the crown of the upper end and of the section being tested. The amount of leakage (infiltration or exfiltration) shall not exceed 100 gallons per inch of diameter per day per mile of pipe.
SECTION 02540
EROSION CONTROL

PART 1 - GENERAL

1.01 The work specified in this Section consists of furnishing, installing and maintaining temporary erosion controls and temporary sedimentation controls.

1.02 DEFINITIONS

A. Temporary erosion controls shall include grassing, mulching, watering and reseeding on-site sloped surfaces, providing berms at the top of the slopes and providing interceptor ditches at the ends of berms and at those locations which will ensure that erosion during construction will be either eliminated or minimized.

B. Temporary sedimentation controls shall include silt dams, traps, barriers and appurtenances at the toe slopes.

PART 2 - MATERIALS

2.01 Hay bales shall be clean, seed free cereal hay type, securely bound.

2.02 Netting shall be 1/2 inch, galvanized steel chicken wire mesh.

2.03 Filter stone shall be crushed stone conforming to the Department of Transportation - State of Georgia-Standard Specifications – Construction of Transportation Systems - 2013 - Table 800.01, Size Number 3.

2.04 Rolled Erosion Control Products:

A. Mulch Control Netting. A planar woven natural fiber or extruded geosynthetic mesh used as a temporary degradable rolled erosion product anchor loose fiber mulches
   Max. Gradient = 5:1 (H:V) in slope application
   C Factor = <0.10 @ 5:1 in slope application
   Max Shear stress 0.25 lb/sf in channel application
   Min. Tensile Strength ultra short (3 mo) and short (12 mo) term = 5 lbs/ft
   Min Tensile Strength extended term (24 mo) = 25 lbs/ft

B. Open Weave textile. A temporary degradable rolled erosion control product composed of processed natural or polymer yarns woven into a matrix, used to provide erosion control and facilitate vegetation establishment.
   Max. Gradient = 3:1 (H:V) in slope application
   C Factor = <0.15 @ 3:1 in slope application
   Max Shear stress = 1.5 lb/sf in channel application
   Min. Tensile Strength ultra short (3 mo) and short (12 mo) term = 50 lbs/ft
   Min Tensile Strength extended term (24 mo) = 100lbs/ft

C. Erosion Control Blanket. A temporary degradable rolled erosion control product composed of processed natural or polymer fibers mechanically, structurally or chemically bound together to form a continuous matrix to provide erosion control and facilitate vegetation establishment.
Netless Rolled Erosion Control Blankets:
Max. Gradient = 4:1 (H:V) in slope application
C Factor = <0.10 @ 4:1 in slope application
Max Shear stress = 0.5 lb/sf in channel application
Min. Tensile Strength ultra short (3 mo) and short (12 mo) term = 5 lbs/ft

Single-net Erosion Control Blankets:
Max. Gradient = 3:1 (H:V) in slope application
C Factor = <0.15 @ 3:1 in slope application
Max Shear stress = 1.5 lb/sf in channel application
Min. Tensile Strength ultra short (3 mo) and short (12 mo) term = 50 lbs/ft
Min Tensile Strength extended term (24 mo) = 100lbs/ft

Double-net Erosion Control Blankets:
Max. Gradient = 2:1 (H:V) in slope application
C Factor = <0.2 @ 2:1 in slope application
Max Shear stress = 1.75 lb/sf in channel application
Min. Tensile Strength ultra short (3 mo) and short (12 mo) term = 75 lbs/ft

D. Turf Reinforcement Mat. A rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh, and/or other elements, processed into a permanent, three dimensional matrix of sufficient thickness. TRMs, which may be supplemented with degradable components, are designed to impart immediate erosion protection, enhance vegetation establishment and provide long term functionality by permanently reinforcing vegetation during and after maturation. These products are typically used in hydraulic applications such as high flow ditches, channels, steep slopes, stream banks, and shorelines, where erosive forces may exceed the limits of natural, unreinforced vegetation.
Slope Application max gradient = 0.5:1 (H:V)
Channel Application Max Shear Stress: 5A, B, C as defined in FHWA guidelines
5A = 6.0 lb/sf, 5B = 8.0 lb/sf, 5C = 10.0 lbs/sf
Min. Tensile Strength: 5A, B, C as defined in FHWA guidelines
5A = 125.0 lb/ft, 5B = 150.0 lb/ft, 5C = 175.0 lbs/ft 5A, B, C as defined in FHWA guidelines

PART 3 - EXECUTION

3.01 SEDIMENTATION CONTROL

A. Silt dams, traps, barriers, and appurtenances shall be installed and shall be maintained in-place for duration of construction.

B. Hay bales shall be staked with two (2) 1 x 4 wood stakes per bale driven eighteen (18) inches into the ground and finishing flush with the top of the bale.
1. Install two (2) stakes per bale with the long dimension of the stakes parallel to the long dimension of the bale.
2. Where bales are installed in multiple layers the bales shall be installed with vertical joints staggered and two (2) 1 x 4 wood stakes per bale driven through all layers, full from top of bale to eighteen inches into the ground.
C. Hay bales which have deteriorated shall be replaced with new materials.

D. Erosion and sedimentation controls shall be maintained in a condition which will retain unfiltered water.

E. The Contractor shall construct the sedimentation ponds and control devices prior to clearing and grubbing the site to insure complete silt control. When the silt or the debris level is greater than 1 foot above the bottom of the pond, the Contractor shall remove the silt or debris to restore the proper elevation for the bottom of the pond.

F. The Contractor shall have all erosion and sedimentation control devices in service and operating properly prior to completion and final acceptance of the contract.

G. Two widths of silt fence are available, Type A or C (36” height) and Type B (22” height). In order to determine which to use, the project duration, slope gradient, and slope length must be known (See Table 6-13.1 below). Approved silt fence fabrics are listed in the Georgia Department of Transportation list #36. The manufacturer shall have either an approved color mark yarn in the fabric or label the fabricated silt fence with both the manufacturer and fabric name every 100 feet.

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<tr>
<th>Percent</th>
<th>Maximum Slope Length Behind Fence</th>
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<tr>
<td>&lt;2</td>
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<td>2 to 5</td>
<td>75 feet</td>
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<td>5 to 10</td>
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<td>10 to 20</td>
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<td>&gt;20</td>
<td>15 feet</td>
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All silt fence must meet the minimum standards set forth in Section 171- temporary Silt Fence, of the Department of Transportation, State of Georgia, Standard specification, current edition. See Table 6-13.5 for current Georgia DOT silt fence specifications.

3.02 EROSION CONTROL BLANKET INSTALLATION

A. Prepare a stable and firm soil surface free of rocks and debris. Apply soil amendments as necessary to prepare seedbed. Place fertilizer, water, seed in accordance with manufacturer and specification recommendations. Unroll parallel to the primary direction of flow. Ensure that the product maintains intimate contact with the soil over the entire installation. Do not stretch or allow material to bridge over the surface. Staple/stake blanket to soil such that each staple/stake is flush with the underlying soil. Install anchor trenches, seams, and terminal ends as specified.

B. The Upslope Trench, Seams, and Terminal Ends may be secure by anchor trench, checks, slots, or staples as outlined in Erosion Control technology Council (ECTC) standards for upslope security.

C. Staple installation shall be at a rate of 1.7 staples per square yard minimum. Sandy or silty soils may require more. Wet installations may require a more density securing.
D. If seaming method is used seams shall overlap at least 4” and staples must be placed at sufficient spacing to avoid separation.

E. Staples must be placed at 4”x 4” spacing on check slots and check seams.

F. Consecutive rolls shall have overlaps of at least 6” and secured with staples every 1 foot.

3.03 RESPONSIBILITY

A. The Contractor shall be solely responsible for insuring that no silt or debris leaves the immediate construction site. Any silt or debris that does leave the immediate site shall be cleaned up and the area disturbed shall be returned to its natural state as directed by the Engineer at the Contractor’s expense.

B. The Contractor has the option to submit additional control measures in the form of shop drawings.
SECTION 02611
BASE AND PAVING

PART 1 - GENERAL

1.01 APPLICABLE STANDARDS

A. When used in this section, the term "Standard Specifications" shall mean the DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES 2013 or later edition.

B. American Society for Testing and Materials (ASTM):

D-698 Test for, Moisture-Density Relations for soils
D-1557 Test for, Moisture-Density Relations for soils

PART 2 - PRODUCTS

2.01 MATERIALS

A. Base: The base shall conform to Section 310, Graded Aggregate Construction, of the Standard Specifications and must be granite base material.

B. Prime: The prime coat shall be RC-70 and shall conform with Section 412, Bituminous Prime, of the Standard Specifications.

C. Tack Coat: The tack coat shall be RC-70 and shall conform with Section 413, Bituminous Tack Coat of the Standard Specifications.

D. Intermediate Course (Binder): The intermediate course shall be Superpave 19 mm Asphaltic Concrete and shall conform with Section 402, Hot Mix Asphaltic Concrete Construction of the Standard Specifications.

E. Surface Course - Asphalt Plant Mix: The surface course shall be either Superpave 9.5 mm or 12.5 mm Asphaltic Concrete and shall conform with Section 402, Hot Mix Asphaltic Concrete Construction, of the Standard Specifications.

F. Paint: Paint for pavement marking shall be in conformance with MUTCD publication and shall conform with Section 870, Paint, of the Standard Specifications.

B. Concrete Curb and Gutter: Shall conform to Section 441 -Concrete Curb, Gutter, Combination Curb and Gutter, Header, and Median of the Standard Specification.

PART 3 - EXECUTION

3.01 COMPACTION

A. Sub-grade: The upper 24 inches of sub-grade soils in all cut areas and all fill areas that are to receive new pavements shall be scarified and re-compacted until a density equivalent to 95% standard Proctor maximum dry density in accordance with ASTM D698 has been obtained.
B. Base: All base shall have minimum compaction of 100% of the maximum density obtained by the test procedure present in ASTM D1557, Method D (Modified Proctor). The maximum permissible lift thickness shall be 6 inches (compacted). The contractor shall be required to perform all work necessary to meet the minimum compaction requirements.

C. Moisture Content: Compaction shall be performed only when the moisture content of the soil is within 4% of the optimum moisture content at the time of compaction as determined by ASTM D698. Soils are to be dried prior to compaction by discing and aeration. An Independent Testing Laboratory shall determine if soils are within the optimum moisture content. The contractor shall be required to perform all work necessary to meet the minimum compaction requirements.

3.02 CONSTRUCTION

A. Preparation of Sub-grade: Prior to placing of base and pavements, the construction of all utility lines (water, sewer, power, gas, etc.) which are to be placed under the pavements shall have been completed.

B. Base: The base course shall be constructed in accordance with Section 310 of the Georgia Department of Transportation Standard Specifications to the compacted thickness specified.

C. Prime: The prime coat shall be applied at a rate of 0.25 gallons per square yard and in accordance with Section 413 of the Georgia Department of Transportation Standard Specifications.

D. Tack Coat: The tack coat shall be applied at a rate of 0.10 gallons per square yard and in accordance with Section 413 of the Georgia Department of Transportation Standard Specifications.

E. Intermediate and Surface Course - Asphalt Plant Mix: The intermediate and surface courses shall be constructed in accordance with Section 402 of the Georgia Department of Transportation Standard Specifications to the thickness indicated. All thicknesses are compacted.

F. Painting Stripe: Pavement striping is required and shall be in accordance with Georgia Department of Transportation MUTCD publication.

G. Existing pavement which has pavement markings damaged by this construction shall be repainted.

H. Concrete Curb and Gutter: Shall be constructed in accordance with Section 441 of the Georgia Department of Transportation Standard Specification.

3.03 TESTING

A. Compaction testing shall be performed by an approved testing laboratory. Sub-grade and base compaction testing shall be performed at a spacing not to exceed 500’ staggered for the entire length of the street. On streets shorter than 1,000’ the testing spacing shall reduce to 300’ and in no case will be less than three tests per street, equally spaced. The Design Engineer and the construction Inspector shall be
provided copies of the test information prior to placement of base material or final pavement.

B. Prior to the installation of any curb & gutter or base material a test roll must be performed along the entire roadway length, both sides of the road. The test roll shall be performed utilizing an 18 C.Y. tandem axle dump truck loaded with at least 12 C.Y. of soil or gravel. The same test roll will be required on the base material prior to beginning pavement installation. The Design Engineer and construction Inspector shall be present during the test roll.

C. Prior to beginning the installation of any asphalt pavement, the base material shall be tested to determine thickness and graded cross section of the base material. The contractor shall provide labor and equipment to auger through the base material to check to insure the thickness specified in the plans and specifications has been achieved. In addition, the cross slope of the base and the depth below the gutter face shall be checked, utilizing a string line, to insure proper crown and asphalt depth at the edge has been achieved with the base grading. If the depth of base material is insufficient the base present will be removed, the subgrade lowered and adequate base material will be replaced to achieve the required thickness. If the cross slope or edge depth is determined to be less than the specified thickness, the area will be rejected until the area is re-graded to the slope and the thickness specified on the approved plan.

D. The Owner at his option may check the thickness of the asphalt pavement and base material after the installation is complete. If the Owner finds the materials to be less than specified the contractor/developer shall take necessary measures to meet the requirements of the approved plans and specifications.

E. Prior to any striping being performed, the contractor shall prepare a striping plan for approval by the construction inspector.

3.04 EXISTING PAVEMENT RESTORATION

A. Pavement damaged due to construction shall be patched or replaced in accordance Section 400 of the Georgia Department of Transportation Standards and Specifications.

B. Pavement damaged by new utility trenches shall be restored in accordance with the pavement removal and replacement details. Any pavement removed must be disposed of by the contractor at a permitted site.

C. Existing inlets, manholes, or valve boxes shall be adjusted by the Contractor to the new grade lines and elevations. All adjustments to structures in areas proposed for pavement shall be accomplished prior to construction of the surface course.

D. Adjustment to grade of existing frames shall include raising or lowering the upper portion of the structure, including any necessary sleeve extensions, adjustable manhole rings, gaskets, mortar, masonry or other approved material, to bring the frame to the required grade.
3.05 STRIPING OF PAVEMENT MARKINGS

A. Striping shall consist of furnishing and applying traffic markings with paint or thermoplastic in accordance with the contract drawings and specifications, and the requirements of the current Federal and State "Manual of Uniform Traffic Control Devices."

B. Thermoplastic Plastic Stripe shall consist of solid or broken (skip) lines, words and/or symbols of the type, color and the location shown on the plans. It is the intent of these specifications that short lines which are defined to be crosswalks, stop bars, arrow symbols and crosshatching shall be extruded. All other lines, unless otherwise specified, shall be sprayed.

C. Cleaning: All pavement areas to be striped shall be thoroughly cleaned. Cleaning may be accomplished by the use of hand brooms, rotary brooms, air blasts, scrapers or other approved methods which leave the paving surface thoroughly clean and undamaged. Particular care shall be taken to remove all vegetation and road film from the area to be striped.

D. Warranty: The Contractor shall transfer to the Governing Authority the warranty on Thermoplastic materials issued by the Manufacturer.
PART 1 - GENERAL

1.01 DEFINITION

A. When used in this section, the term "Standard Specifications" shall mean the DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES, 2013 Edition or later edition, unless amended herein.

1.02 DESCRIPTION

A. Related Work Specified Elsewhere:

1. Trench Excavation, Backfill and Compaction-Section 02221.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Base: Granular material to meet the following gradation:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>PERCENT PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/2&quot;</td>
<td>100</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>60-100</td>
</tr>
<tr>
<td>10</td>
<td>30-55</td>
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<tr>
<td>60</td>
<td>8-35</td>
</tr>
<tr>
<td>200</td>
<td>5-20</td>
</tr>
</tbody>
</table>

B. Concrete: 3000 psi compressive strength

C. Prime Coat: RC-70 Georgia DOT Specifications

D. Surface Course - Asphalt Plant Mix: The surface course shall be either Superpave 9.5 mm or 12.5 mm Asphaltic Concrete and shall conform with Section 402, Hot Mix Asphaltic Concrete Construction, of the Standard Specifications.

PART 3 - EXECUTION

3.01 CONCRETE PAVEMENT REPLACEMENT (DRIVEWAYS)

A. Existing pavement shall be removed to a minimum of 12 inches on either side of the trench.

B. Following trench backfilling and compaction, the depth of concrete pavement replaced shall match the existing pavement or shall be a minimum of 6 inches thick, whichever is greater.

C. Joints and finish of the concrete slab shall match existing pavement.
D. Pavement replacement for each driveway shall be accomplished with one pour. Deviation must be approved by the Engineer.

E. All joints shall have waterproof sealer to avoid water intrusion and deterioration of the patch.

3.02 CONCRETE PAVEMENT REPLACEMENT (ROADWAY)

A. Existing pavement shall be removed to a minimum of 12 inches on either side of the trench.

B. A minimum 8 inch concrete slab containing black dye in the top 2 inches (minimum) shall be placed extending 12 inches on either side of the trench and on undisturbed soil. The dye shall be added to the concrete in the truck, not after it exits the truck.

C. Depth of concrete pavement replaced shall match the existing pavement or shall be a minimum of 8 inches thick, whichever is greater.

D. Joints and finish of the slab shall match existing pavement. Joints shall have expansion material between old and new paving.

E. All slabs shall be installed in one pour unless directed otherwise by the Engineer. If construction joints are required, measures must be taken to avoid deterioration of the patch later by water intrusion.

3.03 ASPHALT PAVEMENT REPLACEMENT

A. Existing pavement shall be removed to a minimum of 12 inches on either side of the trench.

B. Granular base material shall be placed to a minimum depth of 8 inches and compacted to 95% maximum dry density following trench backfilling and compaction.

C. If so directed by the Engineer the base shall be a 6 inch concrete slab extending 12" on either side of the trench and on undisturbed soils, then a 2 inch asphalt surface course shall be placed after a prime coat is applied to the concrete slab at the rate of 0.25 gallons per square foot to bring the paving to grade.

3.04 MAINTENANCE OF SURFACE

A. Pavement damage due to settlement of backfill: Repair for period of bond.

B. Depressions more than 6 inches deep in aggregate surfaced areas: Fill to grade for period of bond.

3.05 TESTING

A. Certified laboratory reports shall be required to ensure the subgrade has been compacted to 95% and the base compacted to 100% standard proctor.
PART 1 - GENERAL

1.01 APPLICABLE STANDARDS

A. Conform to Section 700 and other applicable articles of the "Standard Specifications
Construction of Transportation Systems", of the Department of Transportation, State
of Georgia, dated April 18, 2013. Omit all references to measurement and payment.

1.02 SOIL SAMPLES

A. The Contractor shall take soil samples from several areas of the site to be grassed and
have them analyzed by the Georgia Extension Service. The results of the analysis
shall determine the best fertilizer mixture to use on the site.

PART 2 - MATERIALS

2.01 FERTILIZER

A. Commercial Fertilizer: Fertilizer for lawns shall be a complete fertilizer, the nitrogen
content of which shall be derived from either organic or inorganic sources and
meeting the following minimum requirements of plant food by weight, unless the soil
analysis and report indicates a need for a different fertilizer mixture in which case the
recommended mixture shall be furnished and applied. All State and Federal laws
relative to fertilizer must be complied with.

10% Nitrogen - 12% Phosphoric Acid - 12% Potash

B. Ground Limestone: Lime shall be ground dolomitic limestone containing not less
than 85% of total carbonates and shall be ground to such fineness that 50% will pass
through a 20-mesh sieve. Coarser material will be acceptable, provided the specified
rates of application are increased proportionately on the basis of quantities passing
the 100-mesh sieve.

C. Sodium Nitrate shall be a commercial product in dry powder form and shall be
delivered in the original, unopened containers each bearing the manufacturer's
guaranteed statement of analysis. It shall contain not less than 16% Nitrogen.

2.02 LAWN MATERIALS

A. Kentucky 31 Fescue (Fescue elatior: var. arundinacea): Seed shall be 98% minimum
purity and 85% germination.

B. Bermuda Grass (Cyanodon Dactylon): Seed shall be 98% minimum purity and 85%
germination.
PART 3 - EXECUTION

3.01 PREPARATION

A. Prepare the seed bed by thoroughly cultivating, discing and hand raking as necessary to produce a smooth even grade free from hollows or other inequalities. Before any seeding is attempted the soil must be in a well pulverized, smooth, friable condition of uniformly fine texture.

3.02 FERTILIZING AND LIMING

A. Approximately two (2) days prior to the start of seeding operations, apply ground limestone at the rate of 20 pounds per 1000 sq. ft. of lawn area. Either in conjunction with the above operation or immediately afterwards apply the specified Commercial Fertilizer over all lawn areas at the rate of 30 pounds per 1000 sq. ft. of lawn area. Work limestone into the top 6 inches of ground and the fertilizer into the top 2 inches of ground.

B. When the grass has started to cover well (approximately 4 weeks after sowing seed) apply 1-1/2 pounds of Ammonium Nitrate to all lawn areas and immediately water using a fine spray. At the end of the maintenance period and prior to the final inspection apply 10 pounds of the specified Commercial Fertilizer per 1000 sq. ft. of lawn area and immediately water.

3.03 SEEDING

A. Before any seeding is attempted the soil must be in a well pulverized, smooth, friable condition of uniformly fine texture. Lawn areas shall be seeded evenly with a mechanical spreader at the rate of 2 lbs. of seed per 1000 sq. ft., 50% in one direction and the remainder sown at right angles to first sowing. The seeded areas shall be lightly raked, rolled with a suitable weight roller and watered with a fine spray.

B. Fescue planting season shall be as approved by Engineer.

C. Bermuda Grass seeding shall be planted only between May 1 to September 1.

D. When grassing is required between curbs and sidewalks, behind sidewalks in areas adjacent to private property, the Engineer may change the type of seeding to that required to match any type of grass which may be planted and growing on the adjacent lawn. No increase in the Contract Sum will be made for this substitution.

3.04 WATERING

A. Soak soil to a minimum depth of 6 inches immediately after seeding. Do not wash away soil or seed. Keep all surfaces continuously moist thereafter until 30 days after the lawn has been seeded. Use fine spray nozzles only.

3.05 RESPONSIBILITY

A. Maintenance of grass areas shall consist of watering, weeding, cutting, repair of any erosion and reseeding or resodding as necessary to establish a uniform stand of the specified grasses, and shall continue until final acceptance.
B. All grassed areas that do not show satisfactory growth within 15 days after sowing shall be re-sown and re-fertilized as directed until a satisfactory blanket is established. Approximately 3 weeks after sowing the last seed, but not before the seed has taken hold and the grass is growing well, apply sulfate of ammonia or sodium nitrate at the rate of 300 pounds to the acre and water immediately. The lawns shall be considered established when they are reasonably free from weed, green in appearance and the specified grass is vigorous and growing well on each square foot of lawn area. Full coverage is required in 60 days.

C. All grassed areas shall be protected until accepted. All eroded and damaged areas, regardless of cause, shall be immediately repaired and reseeded. Protect lawn areas against traffic.

D. Grassed areas shall be covered evenly with a loose layer of clean wheat, rye, oats, Serecia Lespedeza or Coastal Bermuda Hay. Two tons of dry mulch shall be applied to each acre seeded. Hay shall be placed during calm weather with no wind.

E. As soon as the grass becomes established, a final inspection of the work will be made, provided a written request for such inspection is given to the Engineer. Satisfactory coverage is defined as coverage of the areas seeded with grass that is alive and growing, leaving no bare spots larger than one (1) square foot with 98% coverage.

F. All temporary valves, cutoffs and piping shall be removed by the Contractor at final acceptance of the grassing.
PART 1- GENERAL

1.01 APPLICABLE STANDARDS

A. American Water Work Association (AWWA):
   C200 Steel Water Pipe, 6in. and larger
   C203 Coat-Tar Protective Coatings and Linings for Steel Water Pipelines, Enamel and Tape Hot Applied
   C206 Field welding of steel water pipe

B. American Railway Engineering Association (AREA):
   1-4-13 Bituminous Coated Corrugated Metal Pipe and Arches
   1-4-19 Jacking Culvert Pipe through fills
   1-5 Pipelines

C. Department of Transportation, State of Georgia, Standard Specifications:
   Section 615 Jacking or Boring Pipe

1.02 RAILROAD CROSSINGS

A. Utility crossings shall be made in strict accordance with the applicable sections of the American Railway Engineering Association Specifications and the specifications of the Owner of the railway being crossed. The Railway Engineer shall be notified prior to beginning construction. Construction shall not commence before such permits are acquired.

B. Railroad crossings shall be either carrier pipe encased in a larger bored or jacked casing pipe or as directed by the Engineer.

1.03 HIGHWAY CROSSINGS

A. Utility crossings shall be made in strict conformance with all applicable sections of the State Department of Transportation, State of Georgia, Specifications. The district highway Engineer shall be notified prior to beginning construction.

B. The Owner will acquire all the necessary permits prior to beginning construction. Construction shall not commence until all permits are acquired.

C. Highway crossings shall be by one of the following methods:

1. Boring
2. Jacking
3. Tunneling
PART 2 - EXECUTION

2.01 METHODS OF INSTALLATION

A. Boring or Jacking shall be in accordance with AREA 1-4-19 and 1-5, DOT Specification 615 and as follows:

1. Bored or jacked installation, approved by the Architect/Engineer, shall have a bored hole diameter essentially the same as the outside diameter of the encasing pipe plus the protective coating thickness. If the bored hole diameter is greater than the outside diameter of the pipe, including the thickness of the coating by more than 1 inch, or if voids should develop during the operation and are determined to be detrimental to the work then the voids shall be pressure grouted with an approved mix.

2. The carrier pipe shall be as shown on the plans. If the carrier pipe is steel without casing then the pipe shall be designed to the maximum continuous length possible, thickness and size according to the application needed. The aforementioned steel shall comply with AWWA C 200 and shall be lined and coated in accord with AWWA C 203, subject to the approval of the Engineer. Adapters shall be provided between steel pipe and pipe of other materials.

3. All casing pipe shall be steel, fully bituminous coated in accordance with AREA 1-4-13. Metal thickness shall be as follows.

**MINIMUM WALL THICKNESS FOR STEEL CASING PIPE**

<table>
<thead>
<tr>
<th>Nominal Thickness Inches</th>
<th>Nominal Diameter Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.250</td>
<td>18 and under</td>
</tr>
<tr>
<td>0.281</td>
<td>20</td>
</tr>
<tr>
<td>0.312</td>
<td>22</td>
</tr>
<tr>
<td>0.344</td>
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<tr>
<td>0.375</td>
<td>26</td>
</tr>
<tr>
<td>0.406</td>
<td>28 and 30</td>
</tr>
<tr>
<td>0.438</td>
<td>32</td>
</tr>
<tr>
<td>0.469</td>
<td>34 and 36</td>
</tr>
</tbody>
</table>

4. Steel casing pipe shall conform to the AWWA C200. Steel casing pipe shall be of maximum length possible for the applications intended and shall be welded in conformance with AWWA Specification C206. Steel casing pipe shall be at least 2 inches greater than the largest outside diameter of the carrier pipe including bells, lugs, etc., for carrier pipe less than 6 inches in diameter; and at least 4 inches greater for carrier pipe 6 inches and over in diameter.

5. Casing pipe shall be jacked or bored in place with allowances made for lines and gradients of the carrier pipes. After the casing pipe is installed the carrier pipe shall be installed within it to the exact line and gradient.

6. When the carrier pipe has been installed and securely anchored inside the casing pipe, the ends of the casing shall be plugged with a masonry plug.
7. Construction effort shall not cease when such cessation might tend to harm the total crossing effort. Protective measures shall be taken to protect the railroad and highway as well as the crossing pipe. Pipe work and tunnels shall be protected at the end of each working day against the weather and any other danger.

B. TUNNELING

1. The Contractor must supply the Architect/Engineer, in advance, the method of tunneling for approval prior to any tunnel construction.

2. Tunneling shall only be done after receiving written permission by the Architect/Engineer.

C. Directional Bores

1. Directional bores shall be performed using a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to guidable drill head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power boring operations. Hydraulic system shall be free of leaks. The rig shall have a system to monitor and guide the boring head and shall be capable of monitoring pull back pressure during the pull-back operation. Sufficient spare parts shall be on hand for any break downs which can be reasonably anticipated.

2. Bore head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and boring fluid jets.

3. Drill pipe shall be constructed of high quality 4130 seamless tubing, grade D or better, with threaded box and pins. Tool joints should be hardened to 32-36 RC.

4. Directional bored pipe shall be fusible PVC of the same size and outside diameter as the pipe being installed and should bell to the PVC pipe being used for the rest of the project.
SECTION 03300
CONCRETE GENERAL

PART 1 - GENERAL

1.01 QUALITY STANDARDS

A. Any procedure and material operation specified by reference to the following publications shall comply with the requirements of the current specification or standard:

   A185  Welded Steel Wire Fabric for Concrete Reinforcement.
   A615  Deformed Billet-Steel Bars for Concrete Reinforcement.
   C31   Method of Making and Curing Concrete Compression and Flexure Test Specimens in the Field.
   C33   Specification for Concrete Aggregate.
   C39   Compressive Strength of Molded Concrete Cylinders.
   C94   Specification for Ready-Mixed Concrete.
   C143  Slump of Portland Cement Concrete.
   C150  Portland Cement.
   C172  Sampling Fresh Concrete.
   C192  Making and Curing Concrete Test Specimens in the Laboratory.
   D1751 Preformed Expansion Joint Fillers for Concrete Paving.

2. American Concrete Institute:
   ACI 301 Specification for Structural Concrete for Buildings.
   ACI 305 Recommended Practice for Hot Weather Concreting.
   ACI 318 Building Code Requirements for Reinforced Concrete.

1.02 QUALITY CONTROL

A. The Contractor shall submit to the Engineer, for review a design mix for each class of concrete listed under CLASSES OF CONCRETE, prior to placing any concrete.

B. Verification tests of design mixes and aggregates are required by the Engineer. Verification test specimens shall be made in accordance with ASTM C39 by an Independent Test Laboratory. Compressive strength shown by verification tests shall be at least fifteen percent in excess of the strengths listed under CLASSES OF CONC-
CRETE. The Independent Testing Laboratory shall report the test results to the Engineer, in writing and shall note any failure to meet the specification.

C. Verification tests of design mixes made not more than one year prior to the date of submittal will be acceptable provided they were made from materials identical to those to be used in the project.

D. Mill Test: Conducted in accordance with ASTM A615 recommendations on each 15 tons, or less reinforcing shipped to the job. Two (2) copies of test to be sent to the Engineer.

E. Inspection and Testing of Concrete:

1. The cost of slump tests and sampling, molding, storing, materials, transporting concrete test specimens shall be paid by the Contractor. The laboratory or inspection agency shall be selected by the Owner. Costs of all laboratory testing services required because of failure to meet the requirements of these specifications shall be paid by the Contractor.

2. One set of four (4) acceptance cylinders shall be prepared for each day's placing of each strength of concrete and if more than 50 cubic yards of concrete is placed in any day, there shall be an additional set of cylinders prepared for each 50 cubic yards placed or for any fraction thereof. One cylinder shall be broken at seven days and two at twenty-eight days, with one cylinder held in reserve.

3. Responsibilities in Inspection:

   a. Laboratory's Duties

      1. The reception and marking of specimens in the laboratory, laboratory curing, preparation for breaking and testing of cylinders shall be the responsibility of the laboratory and shall be performed by qualified laboratory personnel, observing all requirements of applicable ASTM Standards. Compression test specimens shall be tested in accordance with ASTM C39.

      2. Prior to the commencement of concrete work, the laboratory shall provide initial instruction in the performance of sampling and testing duties for an employee designated by the Contractor and shall provide him with copies of all ASTM Standards pertinent to his duties.

   b. Contractor's Duties:

      1. The Contractor shall deliver to the laboratory all materials to be used in required testing. He shall supply wheelbarrows, shovels, mixing boards, shaded work space and similar equipment required for molding test cylinders. He shall provide stable, insulated storage boxes, equipped with thermostatically controlled heat, for storage of cylinders in the first 24 hours after molding.

      2. He shall designate an employee, who alone shall perform all operations of sampling concrete, molding test specimens, protecting test specimens for the first 24 hours after molding, and packing and shipping of test specimens. The employee shall make a record of a
slump test in connection with each truckload of concrete. The designated employee shall receive initial instruction in the performance of his sampling and testing duties from a representative of the testing laboratory and shall have available copies of all ASTM Standards pertinent to his duties. Sampling shall conform to ASTM C172. Slump tests shall conform to ASTM C143. Compression test specimens shall be made and cured in accordance with ASTM C31.

3. Each set of test cylinders shipped to the laboratory shall be accompanied by a report giving information as to location in the structure of concrete sampled, time and date of sampling, air temperature, slump, class designated nominal strength, air content if applicable, temperature of concrete, truck number, and time batched. Each report shall be signed by the employee making the test and by the Contractor or his representative, certifying that the test specimens have been made by the one designated, fully instructed employee and have been made in accordance with applicable standard specifications.

4. Should any concrete fail to meet the specified strength, have a slump in excess of that required by the design mix for each class of concrete listed under CLASSES OF CONCRETE, or result in voids, honeycombs or otherwise fail to meet the requirements, the Engineer may order the concrete removed, further tests made, or other remedial measures taken, all at the Contractor's expense.

1.03 SHOP DRAWINGS

A. After making his check the Contractor shall submit to the Engineer one (1) blue line copy of each of placing plans, bending details and bar lists covering all reinforcing steel.

B. Full information for checking and for proper installation without reference to other drawings shall be included. At splices the amount of lap shall be shown. Location and arrangement of accessories shall be clearly shown. Elevations shall be drawn for all reinforced masonry and reinforced concrete walls to a scale no smaller than 1/4 inch = 1 foot.

C. Work shall not proceed before the Contractor has received shop drawings approved by the Engineer. The Contractor shall be responsible for the conformation of all typical and special reinforcing steel details.

D. Engineer's review is for conformance to the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project plans and specifications, nor departures therefrom. The Contractor remains responsible for details and accuracy, for selecting fabrication processes, for techniques of assembly, and for performing his work in a safe manner.

E. Proposed construction joint shall be clearly indicated on shop drawings and subject to approval of the Engineer.

1.04 INSPECTION

A. The Contractor shall give the Engineer 24 hours advance notice before starting to place concrete in any portion of the structure to permit observation. An authorization
of the Engineer shall be secured before concrete is placed. Any concrete placed in violation to this provision shall be replaced by new concrete if required by the Engineer.

B. Prior to notification of the Engineer, the Superintendent shall personally inspect the work and verify that it is ready for observation.

C. At the time of observation, all reinforcing in the area where concrete is to be poured shall be in place, tied and ready for the placement of concrete. All anchors, sleeves, inserts, etc., shall be securely held in position.

1.05 STORAGE

A. Reinforcing steel delivered to the job and not immediately placed in forms shall be placed in racks or other supports at least eighteen (18) inches above ground.

PART 2 - MATERIALS

2.01 CEMENT

A. Portland cement shall conform to ASTM C150, Type I.

2.02 AGGREGATES

A. Aggregates for standard weight concrete shall conform to ASTM C33, maximum size: 3/4 inch.

2.03 WATER

A. Mixing water shall be potable.

2.04 REINFORCING STEEL

A. Reinforcing bars shall be American manufactured conforming to the requirements of ASTM A615 "Deformed Billet Steel Bars for Concrete Reinforcement", Grade 60.

B. Welded wire-fabric or cold-drawn wire for concrete reinforcement shall be of American manufacture and shall conform to the requirements of the ASTM A185 "Welded Steel Fabric for Concrete Reinforcement".

C. Accessories shall conform to the requirements of C.R.S.I. Manual.

2.05 READY MIXED STRUCTURAL CONCRETE:

A. Ready mix concrete shall be mixed and delivered in accordance with these specifications and requirements set forth in ASTM C94. In addition, these following conditions must be met:

1. Concrete shall be normal weight with an ultimate compressive strength at 28 days, and slump as follows:

2. Air entrained concrete shall be used for all structural concrete with the air content not less than 3 percent and no more than 5 percent.
**B. Classes of Concrete:**

- **Class A** $f'_c = 3000 \text{ psi}$, Slump 4 inches +/- 1 inch
- **Class AA** $f'_c = 4000 \text{ psi}$, Slump 3 inches +/- 1 inch
- **Class B** $f'_c = 5000 \text{ psi}$, Slump 5 inches +/- 1 inch

**2.06 EXPANSION JOINT MATERIAL**

A. Expansion joint material at slabs on grade shall be premolded asphalt saturated cellulose fiber or mineral strips conforming to ASTM D1751.

**2.07 WALL TIES**

A. Ties shall be made with break back ends or other means of removing the tie end to a depth of at least 1 inch from the concrete surface after the forms are removed.

**2.08 LIQUID FORM SEALER**

A. Form sealer shall be a standard product compatible with the finish required for exposed concrete and shall contain no paraffin oil or mineral oil.

**PART 3 – EXECUTION**

**3.01 FORMWORK**

A. Forms shall conform to the shapes, lines and dimensions of the members as indicated, and shall be substantial and sufficiently tight to prevent leakage of mortar. They shall be braced or tied together so as to maintain position and shape.

B. Formwork shall be observed by the Engineer before pouring concrete. Before placing the reinforcement, surfaces of wood forms in contact with the concrete, unless lined, shall receive a thorough coating of form sealer. The Engineer shall have the right to reject any forms that do not appear to him to be sufficient as to alignment and of producing the required finished surface. Should misalignment of forms or screed, excessive deflection of forms or displacement of reinforcing occur during concrete placing, corrective measures shall be immediately made to the extent, if necessary, that placing operations shall be stopped and concrete removed from within forms. The surfaces to required dimensions and cross section. Exposed lines and surfaces shall not vary from dimensions shown on plans by more than 1/4 inch in twenty feet.

C. Forms may be constructed of wood or metal. Earth forms for footings may be permitted if local conditions are favorable, and approved by the Engineer. Form work for exposed concrete shall be form grade plywood.

D. Studs, waler, and ties shall be so spaced that the load of wet concrete will not stress ties beyond the printed working load recommended by the manufacturer not cause spans of form material to deflect from a true surface.

E. The Contractor shall maintain a continuous check upon formwork during the placing of concrete. An instrument check shall be periodically made or "Tattle Tail" rods or other devices shall be used to detect any settlement in forms.

F. Conduits in Concrete: Conduits shall not displace reinforcing steel from its intended position, nor impair the strength of the structure.
G. The Contractor shall assume all responsibility for removal of formwork. Elevated concrete slabs shall attain 70% of the specified ultimate strength before removing the forms. After removing forms, slabs shall be reshored at mid-span and at all points under shores supporting forms for the work above. No floor shall be loaded in excess of the live load for which designed unless adequate shores are place beneath members supporting the concrete of load.

3.02 PLACING REINFORCING STEEL

A. Reinforcement shall be shop fabricated, accurately positioned and secured with not less than 16 gauge annealed wire or suitable clips.

B. No bars, partially embedded in concrete shall be field bent, unless noted otherwise.

C. Reinforcing bars shall be accurately placed and secured in position by approved chairs, spacers or ties to maintain the position of the reinforcing steel prior to and during placing of concrete.

D. Reinforcing steel support chairs and bolsters for use in concrete to be exposed shall have galvanized steel leg.

E. No splices shall be made, except as shown on approved Shop Drawings or approved in writing by the Engineer.

F. The placement of reinforcement shall be observed by the Engineer before pouring of concrete. Should there by any delay in the work, reinforcement previously placed shall be reinspected and cleaned if necessary before concrete placement is resumed.

G. Metal reinforcement shall be protected by concrete cover. Where not otherwise shown, the thickness of concrete over the reinforcement shall be as follows:

- Footings: 3" clear sides and bottom
- Slabs: 3/4" clear, top and bottom
- Beams: 2" clear, all around
- Walls: 2" clear, both faces
- Columns & Piers: 2" clear

H. All splicing or reinforcement not shown shall be approved by the Engineer. Splices shall not be made at a point of maximum stress and shall provide sufficient lap to transfer the stress between bars by bond. Hook and bending details, column tie arrangements, etc., shall be as shown by the S.R.A.I. Manual or the ACI Detail Engineering Manual.

I. Wire mesh reinforcing shall be placed one inch from top of concrete slabs on ground. Lap all joints 12 inches and extend mesh to within 1 inch of sides and ends of slabs.

3.03 CONCRETE MIXING AND PLACING

A. Ready-mix concrete shall conform to ASTM C94. Not more than one hour shall elapse between the time mixing water is added to the batch and the concrete is poured. No water shall be added on the job.
B. No concrete shall be placed until all embedded items and reinforcing have been placed in the forms and observed by the Engineer. At least 24 hour notice shall be given the Engineer of an impending pour, so that he may observe the work, prior to placing.

C. Concrete shall be conveyed from the mixer to the place of final deposit by methods that will prevent segregation or loss of materials.

D. Concrete shall be deposited in its final position to avoid segregations and separation do to rehandling or flowing. The placing shall be carried on at such a rate that concrete is at all times plastic and flows readily into the spaces between bars. When placing is once started, it shall be carried on as a continuous operation, until placement of that section is completed.

E. Concrete shall be worked into and around bars and embedded items with spades, rods, trowels and vibrators, so as to produce a solid homogeneous mass, free of voids, pockets or honeycombs.

F. Construction joints shall be installed and located as indicated. Where a joint occurs, the surface of the concrete shall be thoroughly cleaned and all laitance removed and shall be left rough or mechanically roughened, thoroughly wetted and slushed with a coat of neat cement grout immediately before placement of new concrete.

G. All embedded items, including anchor bolts and dowels, shall be in place, preset and held in position, before any concrete is placed.

H. No concreting shall be performed when ambient temperatures are below 40°F or if the temperature is predicted by the local U.S. Weather Bureau will fall below 40°F within 24 hours after the time of installation.

I. No concrete shall be installed against frozen ground. All foundation cavities and slab areas that have frozen, shall be thoroughly clean of all loose earth prior to pouring concrete.

J. All newly poured concrete shall be protected from freezing or near freezing weather during the cure period.

K. Hot weather precautions shall be taken whenever the maximum air temperature exceeds 80°F during the day. Hot weather concreting shall be performed in accordance with ACI 305.

3.04 EXPANSION/CONTROL JOINT INSTALLATION

A. Expansion joints shall be placed a maximum of 20 ft. intervals and at all intersections with steps, curbs other walks or abutting structures. Joints shall extend from the surface to the subgrade at right angles to the sidewalk.

B. Expansion joint filler shall be 1/2 inch thick and as wide as the full width and depth of the sidewalk.

C. Control joints (tooled or saw-cut) shall be placed at no less than 12 and no more than 15 ft. intervals, in a square grid, throughout the full length and width of the concrete slab. All control joints shall be filled with semi-rigid epoxy, specifically
manufactured for the sealing of control joints in concrete slab construction, to create a water tight slab.

3.05 ANCHORAGE

A. Slots, inserts, and connections elements for anchoring items to concrete shall be built into forms before placing concrete.

3.06 SLABS ON GRADE

A. Concrete shall be compacted, screeded to grade and prepared for the specified finish. Slabs shall be placed in panels in alternate checkerboard pattern or in alternate lanes divided into panels. Each panel shall be approximately square terminated by slab joints.

B. Contraction joints shall be true to line 1/8 inch wide, and of depth equal to approximately 1/4 of the slab thickness. Joints shall be sawed or formed.

3.07 CURING

A. Provisions shall be made for maintaining concrete in a moist condition for at least 10 days after the placement of the concrete, or by one of the following methods:
   1. Spraying with water or ponding.
   2. Using moisture retaining covers.
   3. Concrete curing compound, W.R. Meadows CS-309 or Guardian Chemical Co., Master Builders or Triple-Cure by Cobra Chemicals.

B. The spraying water shall be applied on unformed surfaces within one hour after the forms are stripped and the spraying shall be continuous. The moisture retaining cover shall be applied on unformed surfaces immediately after the concrete is finished. If there is any delay, the concrete shall be kept moist until the application is made. If the surfaces are formed, the forms shall be removed and the concrete sprayed lightly with water before the cover is applied.

C. When concrete surfaces are to receive applied finishes of materials, all curing compounds shall be checked for compatibility with other material to be applied to the concrete surfaces before application.

3.08 CONCRETE FINishes

A. All poured joints, voids, honeycombs and other imperfections shall be patched within the same working day that forms are removed.

B. Troweled Finish:
   1. Troweled finish shall be applied to the surface of all floors unless ceramic tile, quarry tile or pavers are called for on finish schedule.
   2. Floor slabs shall be screened to an even surface by the use of straight-edge and screeding strips accurately set to the proper grade. The concrete shall be floated
with a wood float in a manner which will compact it and produce a surface free from depressions or inequalities of any kind. Floors shall be level with a tolerance of 1/8 inch in 10 feet except where drains are indicated. After the concrete has hardened sufficiently to prevent fine materials from working to the top and has been allowed to stand until all water sheen has disappeared, it shall be steel troweled. Final troweling shall be done after the concrete is hard enough that no mortar accumulates on the trowel and a ringing sound is produced as the trowel is drawn over the surface. The drying of the surface moisture before troweling shall proceed naturally and shall not be hastened by the dusting on of dry sand or cement.

C. Non-slip Finish: All exterior platforms and step treads shall be made non-slippery by application at not less than 1/4 lb. per sq. ft. of aluminum oxide or emery aggregate graded from particles retained on a #50 mesh screen to particles passing an 1/8 inch screen placed during the finishing process. Abrasive aggregate shall be sprinkled by hand as soon as the freshly placed cement will support the weight of workmen and floated into the surface.

D. Unfinished Slabs: Depressed slab areas to receive ceramic quarry tile or pavers shall be finished to remove all laitance and to leave a slightly roughened, surface to insure bond. The surface of the slab shall not vary in any direction more than 1/8 inch when tested with a ten foot straight edge. The straight edge shall be lapped one half its length as the test is being made.

3.09 CONCRETE FLOOR HARDENER

A. All concrete floor slabs shall be cured with concrete floor hardener, "Clear Bond", as manufactured by Guardian Chemical, "Triple-Cure: by Cobra Chemicals, or "Sealtight Cs-309 by W.R. Meadows. The floor hardener shall be applied in strict accordance with the manufacturer's recommendations.

B. Walks shall be tooled, full 1 inch deep into separate slabs as indicated. Surface edges of each slab shall be rounded to approximately 1/4 inch radius.

C. Final finish shall be a medium or light broom finish and all tool marks completely removed.