

CONTRACT DOCUMENTS

FOR



PARKING LOT IMPROVEMENTS TO SERVE VITOVKSY ELEMENTARY SCHOOL

PREPARED BY:



teague nall & perkins

5237 N. Riverside Drive, Suite 100

Fort Worth, TX 76137

TBPE Registration No. F-230

TNP NO. MLT23062

APRIL 2023



04/06/2023

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SECTION A

REQUEST FOR COMPETITIVE SEALED PROPOSAL



REQUEST FOR COMPETITIVE SEALED PROPOSALS

Competitive Sealed Proposals for the work identified below in accordance with Proposal Documents and addenda as may be issued prior to date of proposal opening will be received by the Board of Trustees, Midlothian Independent School District, until proposal closing date and time, as identified below. Proposals from Offerors will then be opened in public and read aloud.

OWNER: **Midlothian Independent School District**
100 Walter Stephenson Road
Midlothian, TX 76065

ENGINEER: **Teague Nall and Perkins Inc (TNP)**
5237 N. Riverside Drive, Suite 100
Fort Worth, TX 76137

PROJECT: **CSP 2223-03 Midlothian ISD**
Vitovsky Parking Lot Addition Project
Midlothian Independent School District
Midlothian, Texas

PROPOSAL DATE AND TIME: Proposal Due: **Thursday, April 27, 2023 @ 2:00 PM**

LOCATION OF PROPOSAL OPENING: **Midlothian Independent School District**
Administration Building
100 Walter Stephenson Rd
Midlothian, TX 76065

Proposal Documents will be available April 6, 2023. Qualified Offerors (General Contractors) may obtain a free electronic copy of the Project Manual.

A link to the digital copies of the project manual and drawings (if applicable) may be obtained from the MISD Website and/or Ms. Shana Volentine, e-mail: shana.volentine@misd.gs

All proposals must be in the hands of the Owner no later than the time specified above. Please seal all proposals in duplicate in an envelope with the following information on the face of the envelope.

Name of Offeror (General Contractor)
CSP 2223-03 Midlothian ISD Vitovsky
Parking Lot Project
Midlothian Independent School District

The Owner reserves the right to reject any and all proposals and to waive any irregularities in the Competitive Sealed Proposal process. No proposal shall be withdrawn within 30 days after the proposal opening without the specific consent of the Owner.



PROPOSAL BOND: Not Applicable

PAYMENT BOND AND PERFORMANCE BOND: A Payment Bond and Performance Bond, each in an amount equal to 100 percent (100%) of the Contract Sum conditioned upon the faithful performance of the Contract will be required. Please note that all bonding companies presented must be acceptable to the Owner.

The prevailing rates of wages are the minimums that must be paid in conformance with all applicable laws of the State of Texas.

All Offerors submitting a proposal are encouraged to attend the proposal opening. Subcontractors and suppliers intending to submit proposals to Construction Offerors are required to prepare their proposals based on a complete set of proposal documents. If after reviewing the complete set of proposal documents, Subcontractors and supplier Offerors desire to purchase individual drawings and specification sections for their proposal convenience, they may do so by ordering the specific drawings and specifications directly from the reproduction company.

All Offerors submitting a proposal are encouraged to visit the site.

END OF DOCUMENT



INSTRUCTIONS TO PROPOSERS

EXAMINATION OF DOCUMENTS AND SITE

- Each proposer, by making his Proposal, represents that he has read and understands the Proposal Documents. Failure to do so may be materially non-responsive and result in non-consideration of the bid.
- Each proposer, by making his Proposal, represents that he has visited the site, performed investigations and verifications as necessary and familiarized himself with the local conditions under which the Work is to be performed and will be responsible for errors in his proposal resulting from his failure to do so.
- Each proposer by making his proposal represents that his proposal is based upon the materials, systems and equipment required by the Proposal Documents without exception.
- Any and all site visits shall be coordinated through:

Jose Martinez

Midlothian ISD

Email: jose.martinez1@misd.gs

QUESTIONS

- Proposers shall submit questions about the Proposal Documents to the MISD Purchasing Department in writing by the date identified in the proposal. Replies will be issued to proposers as an addendum to the Proposal Documents and shall become a part of the Contract. The Owner will not be responsible for oral clarification.
- Submit all questions to:

Shana Volentine

Midlothian ISD

Purchasing Coordinator

Email: shana.volentine@misd.gs

SUBSTITUTIONS

- Each proposer represents by submitting his proposal that his proposal is based upon the materials and equipment described in the proposal documents

STATUTORY PERFORMANCE BOND AND STATUTORY LABOR AND MATERIAL PAYMENT BOND

- A Statutory Performance Bond and a Statutory Labor and Material Payment Bond will be required of the successful proposer and shall be executed by a surety company acceptable to the Owner and authorized to do business in the State of Texas. Each bond shall be in an amount equal to one hundred percent (100%) of the contract price. The Performance Bond and the Labor and Material Payment Bond may be in one or separate instruments in accord with local law and are to be delivered to the Owner no later than the date of execution of the contract. Failure or neglecting to deliver said bonds, as specified, shall be considered as having abandoned the contract and the proposal security will be retained as liquidated damages.
- Bonds shall be executed by a Surety Company that is:
 - Approved by the school district, and duly authorized and admitted to do business in the State of Texas as determined by the State Board of Insurance.
 - Listed by the United States Department of the Treasury in that issue of the "Federal Register" covering the date on which the bond was executed and the date that Surety Company has obtained reinsurance, if applicable, from a reinsurer that is authorized and admitted as a reinsurer in this state and is the holder of a certificate of authority from the United States Secretary of the Treasury.

CERTIFICATE OF LIABILITY INSURANCE

- The successful proposer shall provide a Certificate of Liability Insurance in at least the amount of \$1,000,000.00. The Midlothian Independent School District shall be listed as additional insured.

MODIFICATION AND WITHDRAWAL

- No proposal may be changed, amended or modified after submittal. Proposers may withdraw proposals prior to proposal opening.
- No right or interest in this contract or delegation of any obligation shall be assigned by the vendor to another vendor. Any attempted assignment or delegation by the vendor shall be wholly void and totally ineffective for all



purposes.

SUBMITTAL

- Submit proposals in accordance with the Request for Proposals.
 - Enclose proposal in an opaque, sealed envelope. Clearly mark on the outside of the proposal envelope:
Project name and CSP Number
Name of proposer
Midlothian Independent School District
- Preparation of Proposals: Proposals shall be submitted on unaltered proposal forms. Fill in all blank spaces. If there are entries (blank spaces) on the proposal form which do not apply to a particular proposer, these entries shall be marked "N.A." (Not Applicable) by the proposer. No proposals will be considered that are amended or are qualified with conditional clauses, alterations, items not called for in the proposal, or irregularities of any kind which, in the Owner's opinion, may disqualify the proposer.
- Proposals meeting the requirements of the CSP shall be considered. Respondents taking exception to the specifications or offering substitutions shall state these exceptions.
- Each proposer shall submit one original, one duplicate copy, and one digital copy saved on a USB Flash Drive of each of the following. All shall be submitted in a single sealed envelope. Electronic signatures are acceptable.:
 - Checklist for CSP 2223-03 (Provided for Reference) *this is not all inclusive of required information, read entire CSP for all information for complete evaluation of submission.
 - Proposer Identification: Contractor shall add a Cover Sheet/Proposer Identification Form that includes the following information:
 - Date
 - Company Name
 - Full Address
 - Phone #
 - Email Address
 - Proposal Form
 - Proposer shall note any contract deviations. Midlothian Independent School District can consider such deviations but is not obligated to accept such deviations
 - CSP Response Form Page 1 and Page 2
 - SB 9 Contractor Certification: Contractor Employees
 - Reference Sheet
 - Felony Conviction Notice (Reference form attached to the end of this Section)
 - 1295 Certificate of Interested Parties - This form must be completed online, printed and signed. (Reference form attached to the end of this Section)
 - Conflict-of-interest Questionnaire (Reference form attached to the end of this Section)
 - Non-collusion & Non-Discrimination Form (Reference form attached to the end of this Section)
 - HB 89/SB 252 Certification Form (Reference form attached to the end of this Section)
 - All other information that responds to the Selection Criteria listed.
 - Each proposer shall submit one original, one duplicate copy, and one digital copy saved on a USB Flash Drive listing any subcontractors to be acquired for this project.
- Proposals received in the District's Business Office after the date and time specified will not be considered. The District is not responsible for lateness or non-delivery of mail carrier, etc., and the date/time stamp in the Business Office shall be the official time of receipt. Proposals **MAY NOT** be submitted by facsimile or email.
- Pricing submitted on this proposal is firm for a period of **60 Days** from the proposal opening date.
- The person signing the proposal should show the title that gives the authority to bind the firm to a contract.

DETERMINATION OF SUCCESSFUL RESPONDENT AND AWARD OF CONTRACT

- In determining the Selected Offeror, the Owner will evaluate the information derived from the Offeror's (Contractor's) Qualification Statement required herein, the information submitted on the Proposal Form, and other selection criteria including the following Selection Criteria:

COST	25 POINTS	The purchase price will be scored mathematically as a ratio of the proposal price ranking to the total number of proposers.
REPUTATION	15 POINTS	The reputation of the Proposer's goods and services. Items



		considered: Proposer's past relationships with and input from provided project references regarding recommendation of the Proposer, the Proposer's performance as a team player and their ability to work with the Owner on Change Orders and Contingency Allowances.
QUALITY	20 POINTS	The quality of the Proposer's goods and services. Items considered: - Proposer's past performance with input from provided project references regarding the Proposer's quality of craftsmanship - All required items submitted - Information provided in the proposal is clear
EXPERIENCE	20 POINTS	The Proposer's overall experience as well as past record of completing similar size and scope of projects on time. Items considered: - Number of years in business - Number of similar size projects within the past five years - Number of similar scope projects within the past five years – project scope must include working on an existing, operational campus maintaining full functionality. - Proposer's past performance with input
WARRANTY WORK	10 POINTS	The Proposer's response to warranty work requests. Items considered: Proposer's past performance with input from provided project references regarding the ability to perform warranty work in a timely manner.
PROJECT TEAM	5 POINTS	Qualifications of the proposed project manager(s) and project superintendent (s). Items considered: - Time in the construction industry for each individual - Number of K-12 school projects completed by each individual - Time with company for each individual
PROJECT SCHEDULE	5 POINTS	The Proposer's anticipated construction schedule. Items considered: start date, substantial completion date, final completion date, and total construction duration in calendar days.

- The district does not award/purchase on the basis of low bid alone.
- The District may choose to conduct interviews with proposers as part of the evaluation and selection process. If interviews are necessary will be held at:
Midlothian Independent School District Administration building
100 Walter Stephenson Rd
Midlothian, TX 76065.
- The Selection Committee consisting of Midlothian ISD administrators, consultants and other staff will make an initial evaluation of the proposals. The committee's recommendation will be considered by the Midlothian ISD Board of Trustees ("Board"). The District reserves the right to review the recommendation with others deemed appropriate by the District prior to review by the entire Board. The final decision-making authority on the proposals rests with the full Board.
- The District will make such investigations as it deems necessary to determine the ability of the Offeror to perform the Work, and the Offeror shall furnish all such information and data for this purpose as may be requested. The District reserves the right to reject any proposal if the evidence submitted by, or investigation of, such Offeror fails to satisfy the District that such Offeror is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.
- The District reserves the right to reject any or all proposals and to waive any formalities or irregularities and to make the award of the contract in the best interest of the District. The District also reserves the right as a sole judge of quality and equality.
- A decision regarding determination of the successful Offeror will be made by the District as soon as practical.
- If awarded, the successful vendor(s) will be notified by authorized District personnel.



EXECUTION OF CONTRACT (if applicable)

- The Owner reserves the right to accept any proposal, to reject any and all proposals, or to negotiate contract terms with the various proposers, when such is deemed by the Owner to be in his best interest.
- Notwithstanding delays in the preparation and execution of the formal contract agreement, each proposer shall be prepared, upon written notice of proposal acceptance, to commence work on or before a date stipulated in an official written order of the Owner to proceed.
- The accepted proposer shall assist and cooperate with the Owner in preparing the formal contract agreement, and within 5 days following its presentation shall execute same and return it to the Owner.
- Form for the contract agreement will be AIA Document A101, Standard Form of Agreement Between Owner and Contractor, Stipulated Sum, 2017 Edition. – Or
- The district limits its purchases through the use of properly drawn and authorized purchase orders. Consequently, the District is not responsible for items delivered or picked up and/or services that were not authorized via this method. Therefore, the purchase order number shall appear on ALL itemized invoices and packing slips to ensure payment.
- This contract, once accepted will include the period agreed upon between the District and the vendor(s) to complete the projects listed in the CSP. Any purchase order dated and issued within these dates will be subject to the terms and conditions of this contract.
- If, at any time, the vendor fails to fulfill or abide by the terms, conditions, or specifications of the contract, the District reserves the right upon written notice to the vendor to the following remedies (though not just limited to these): purchase the products/services elsewhere and/or cancel the contract.
- Proposals may not be withdrawn without written approval after a contract has been signed or a purchase order executed or after a partial performance of the proposal agreement has begun.
- The District reserves the right to utilize other District contracts, State of Texas contracts, contracts awarded by other governmental agencies, other school boards, or other cooperative agreements in lieu of any offer received or award made as a result of this proposal, if it is in the District's best interest to do so.

PAYMENT

- The title and risk of loss of the goods/services shall not pass to the District until the District actually takes possession of the goods/services at either the point of sale or the point of delivery.
- On purchase order contracts – itemized invoices shall be issued for only those items/services received. Payment shall not be due until the invoice(s) are submitted after delivery. Pursuant to Texas Government Code 2251.021, payments will be made within thirty (30) days. Invoices shall be mailed directly to:

MISD Business Office

100 Walter Stephenson Rd.

Midlothian, TX 76065

Attn: Accounts Payable

Or

Email to: accounts_payable@misd.gs

TIME OF COMPLETION AND LIQUIDATED DAMAGES

- The contract date will be established as the number of consecutive calendar days as set out on the proposal form from the "Notice-to-proceed" date issued by the Owner.
- Failure of the Contractor to complete the Work by the contract date will result in damages being sustained by the Owner. Such damages are, and will continue to be, impracticable and extremely difficult to determine. Due consideration will be given to delays as outlined in the Contract.
- The Contractor will pay the Owner the amount indicated on the Proposal Form and in the General Conditions for each calendar day of delay in finishing the Work in excess of time specified for completion, plus authorized time extensions. Execution of the Contract under these specifications shall constitute agreement by the Owner and Contractor that the amount indicated is the minimum value of the costs and actual damage caused by failure of the Contractor to Substantially Complete the Work within the allotted time, that such sum is Liquidated Damages and shall not be construed as a penalty, and that such sum may be deducted from payments due the Contractor if such delay occurs.

SALES TAX EXEMPTION

- The Owner qualifies for exemption from State and Local Sales Taxes as set forth in the Supplementary Conditions. Tax exemption certificates will be issued upon request.



TERMINATION OF CONTRACT

- The requirements of Government Code, Chapter 552, Subchapter J - Additional Provisions Related to Contracting Information, applies to this contract and the contractor or vendor agrees that the contract can be terminated if the contractor or vendor knowingly or intentionally fails to comply with a requirement of that subchapter.
- Each respondent must give notice to the District if a person, owner or operator of the business has been convicted of a felony. The District determines that the person or business failed to give such notice or misrepresented the conduct resulting in the conviction.
- Respondents shall note any and all relationships that might be a Conflict of Interest and include such information with the Proposal.
- Please note that a gift to a public servant is a Class A misdemeanor offense if the recipient is a government employee who exercises any influence in the purchasing process of the governmental body. This would certainly apply to anyone who helps establish specifications or is involved in product selection or directs a purchase.

PROHIBITION ON CONTRACTS WITH COMPANIES BOYCOTTING ISRAEL

- Pursuant to Texas Government Code Chapter 2271, if this contract is valued at \$100,000 or more and if Contractor has at least ten (10) full time employees, then Contractor represents and warrants to the Owner that the Contractor does not boycott Israel and will not boycott Israel during the term of this Contract. This section does not apply to a sole proprietorship. On April 25, 2019, the U.S. District Court for the Western District of Texas entered a preliminary injunction enjoining the enforcement of Chapter 2271 as it existed before the amendment in any state contract. In compliance with the Court's order, the Owner will not seek enforcement of the current Chapter 2271 until further order of this or higher court having jurisdiction over the issue.

ADDITIONAL TERMS AND CONDITIONS

- Delivery of goods/services will be made during normal working hours unless prior approval has been obtained.
- The successful proposer shall possess and maintain criminal background checks for all personnel working on District Property.
- MISD reserves the right to purchase additional services as listed on this proposal subject to the verification of the same or lower prices and conditions as the proposal.
- MISD also reserves the right to waive minor technicalities or formalities considered in the best interest of the district.
- In case of discrepancies within the drawings, within the specifications, or between the drawings and specifications, the better quality and greater quantity, shall be furnished and installed.

END OF DOCUMENT



BASE PROPOSAL FORM
CSP 2223-03 Vitovsky Parking Lot Project

PROJECT: Vitovsky Parking Lot Project
Midlothian Independent School District
Midlothian TX

PROPOSAL OF: _____
(Name of Offeror) (Date)

Dear Sir/Madam:

Having examined the project manual, drawings and related documents and having inspected the site of proposed work, I (we) agree to furnish all labor, materials, and to perform all work described in the specifications and shown on the drawings in the sum of:

BASE PROPOSAL: Vitovsky Elementary Parking Lot

_____ DOLLARS

(\$ _____).



NOTE: Amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern.

SCHEDULE

The overall schedule is critical to the success of this project. Contractor shall bid the time for substantial completion and final acceptance and the additional time for the specified alters in the spaces provided above. The project schedule is as follows:

Questions Due:	April 19, 2023 (by noon, 12 pm CST)
Final Addenda:	April 21, 2023 (by 4:00 pm CST)
Bid Due:	April 27, 2023 (2:00 pm CST)
Board Approval:	May 15, 2023
Notice to Proceed:	May 17, 2023
Substantial Completion:	3 months from start date
Project Final Completion:	1 month after substantial completion

Respectfully Submitted

Company / Entity Name

By: _____

Printed Name

Title

Address

Phone Number

Email

Note: Affix seal and authorization if bidder is a corporation.

In the event an award of a contract to the undersigned, the undersigned will (1) furnish a performance and payment bond for full amount of the contract as specified herein, (2) secure proper compliance with the terms and provisions of the contract, (3) insure and guarantee the work until final completion and acceptance and (4) guarantee payment of all



lawful claims for labor performed and materials furnished in the fulfillment of the contract.

The work proposed shall be accepted when the District is satisfied that work is fully completed and finished in accordance with the plans and specifications.

The undersigned certifies that the bid prices contained in the proposal have been carefully checked and are submitted as correct and final.

Receipt is hereby acknowledged for the following addenda to bid proposal (bidder is responsible for checking the website for posted Addenda):

Addendum No. 01	Dated: _____	Received: _____
Addendum No. 02	Dated: _____	Received: _____
Addendum No. 03	Dated: _____	Received: _____
Addendum No. 04	Dated: _____	Received: _____



CSP RESPONSE FORM (Page 1)

2223-03 Vitovsky Parking Lot Project

To: Midlothian ISD
Attention: Shana Volentine
100 Walter Stephenson Rd
Midlothian, Texas 76065

From:

Company Name

Address

City/State/Zip

Area Code & Phone Number

Fax Number

E-mail Address

Federal Tax Identification Number

I, the undersigned, as the owner or legally authorized representative of the above named company, by signing the following statement, agree that I have READ and UNDERSTAND all of the Instructions and Specifications contained herein, and that if accepted by the Midlothian Independent School District, all of the provisions are part of a binding contract between the MISD and our company. I also certify that this bid is made without previous understanding, agreement, or connection with any person, firm or cooperation making a proposal for the same contract, and is in all ways fair and without collusion or fraud.

Owner or Legally Authorized Representative

Signature

Title

Date

RETURN THIS PAGE

CSP RESPONSE FORM (Page 2)

2223-03 Vitovksy Parking Lot Project

Remittance Address (if different):

Address

City/State/Zip

All purchases must occur with a district purchase order.

1) Our firm will accept orders using district purchase orders. YES ☐ NO ☐

2) Our firm hold a HUB certification. YES ☐ NO ☐
If YES, provide a copy of your certification with your response.

3) Our firm holds a MWBE/SBE Certification YES ☐ NO ☐
If YES, provide a copy of your certification with your response.

ADDITIONAL INFORMATION (If Applicable)

If your organization has multiple store locations, please list all store locations that will agree to all the terms and conditions set forth in this proposal/bid document. Please list additional store locations below (attach additional information if needed).

RETURN THIS PAGE



REFERENCES

Please list your client references

1. Business Name: _____

Contact: _____

Address: _____

Phone Number: _____

Email: _____

Scope of Work/Project: _____

2. Business Name: _____

Contact: _____

Address: _____

Phone Number: _____

Email: _____

Scope of Work/Project: _____

3. Business Name: _____

Contact: _____

Address: _____

Phone Number: _____

Email: _____

Scope of Work/Project: _____



CHECKLIST FOR CSP
**2223-03 Vitovsky
Parking Lot Project**

- _____ Proposal Form
- _____ CSP Response Form (Page 1 & 2)
- _____ Reference Sheet
- _____ SB 9 Contractor Certification: Contractor Employees
- _____ Felony Conviction Notice
- _____ 1295 Certificate of Interested Parties
- _____ Conflict-of-Interest Questionnaire
- _____ Non-Collusion & Non-Discrimination Form Resident
and Non-Resident Form
- _____ Statement of Debarment
- _____ HB 89/SB 252 Certification Form
- _____ Information for complete evaluation (see Evaluation
Criteria)

SB 9 Contractor Certification: Contractor Employees

Background: Texas Education Code Chapter 22 requires entities that contract with school districts to obtain criminal history records on covered employees. Covered employees with disqualifying criminal histories are prohibited from serving at a school district. Contractors must certify to Midlothian ISD that they have complied and must obtain similar certifications from their subcontractors. *See SB 9 Contractor Certification: Subcontractor attachment.* The law requires each contractor to obtain the criminal histories of its covered employees. For more information or to set up an account, a contractor should contact the Texas Department of Public Safety's Crime Records Service at 512.424.2474.

Definitions:

Covered employees: Employees of a contractor who have or will have continuing duties related to the service to be performed at a school district and have or will have direct contact with students. Midlothian ISD will be the final arbiter of what constitutes *continuing duties* and *direct contact* with students.

Disqualifying criminal history: (1) a conviction or other criminal history information designated by Midlothian ISD; (2) a felony or misdemeanor offense that would prevent a person from being employed under Texas Education Code § 22.085(a), that is: if at the time of the offense, the victim was under 18 or was enrolled in a public school; (a) a felony offense under Title 5, Texas Penal Code; (b) an offense on conviction for which a defendant is required to register as a sex offender under Chapter 62, Texas Code of Criminal Procedure; or (c) an offense under federal law or the laws of another state that is equivalent to (a) or (b).

On behalf of _____ ("Contractor"), I, the undersigned authorized signatory for Contractor, certify to Midlothian Independent School District ("Midlothian ISD") that [check one]:

[] None of Contractor's employees are *covered employees*, as defined above. If this box is checked, I further certify that Contractor has taken precautions or imposed conditions to ensure that its employees will not become *covered employees*. Contractor will maintain these precautions or conditions throughout the time the contracted services are provided.

Or

[] Some or all of Contractor's employees are *covered employees*. If this box is checked, I further certify that:

- (1) Contractor has obtained all required criminal history record information regarding its covered employees. None of the covered employees has a disqualifying criminal history.
- (2) If Contractor receives information that a covered employee subsequently has a reported criminal history, Contractor will immediately remove the covered employee from contract duties and notify Midlothian ISD in writing within 3 business days.
- (3) Upon request, Contractor will provide Midlothian ISD with the name and any other requested information of covered employees so that Midlothian ISD may obtain criminal history record information on the covered employees.

If Midlothian ISD objects to the assignment of a covered employee on the basis of the covered employee's criminal history record information, Contractor agrees to discontinue using that covered employee to provide services at Midlothian ISD.

I also certify to Midlothian ISD on behalf of Contractor that Contractor has obtained certifications from its subcontractors of compliance with Texas Education Code, Chapter 22. Noncompliance or misrepresentation regarding this certification may be grounds for contract termination.

Signature

Title

Date



Felony Conviction Notice

Statutory citation covering notification of criminal history of contractor is found in the Texas Education Code

#44.034. Following is an example of a felony conviction notice:

FELONY CONVICTION NOTICE

Senate Bill 1, passed by the State of Texas Legislators, Section 44.034, Notification of Criminal History, Subsection (a) states, “a person or business entity that enters into a contract with a school district must give advance notice to the district if the person or owner or operator of the business entity has been convicted of a felony.” The notice must include a general description of the conduct resulting in the conviction of a felony.

Subsection (b) states, “A school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction. The district must compensate the person or business entity for services performed before the termination of the contract.

This notice is not required of a publicly held corporation.

I, the undersigned agent for the firm named below certify that the information concerning notification of felony conviction has been reviewed by me and the following furnished information is true to the best of my knowledge.

Vendor’s Name: _____

Authorized Company Official’s Name: (please print)

A. My firm is a publicly held corporation; therefore, this reporting requirement is not applicable.

Signature of Company Official: _____

B. My firm is not owned nor operated by anyone who has been convicted of a felony.

Signature of Company Official: _____

C. My firm is owned or operated by the following individual(s) who has/have been convicted of a felony: Name

of Felon(s): _____

Details of Conviction: _____

Signature of Company Official: _____

THIS COMPLETED FORM MUST BE RETURNED WITH PROPOSAL

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties. Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

4	Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
			Controlling	Intermediary

5 Check only if there is NO interested Party. ☐

6 UNSWORN DECLARATION

My name is _____, and my date of birth is _____.

My address is _____ (street) _____ (city) _____ (state) _____ (zip code) _____ (country)

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

Executed in _____ County, State of _____, on the _____ day of _____, 20____.
(month) (year)

Signature of authorized agent of contracting business entity
(Declarant)

ADD ADDITIONAL PAGES AS NECESSARY

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

2 Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information is being disclosed.

Name of Officer

4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes

☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes

☐ No

5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

Signature of vendor doing business with the governmental entity _____

Date

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed;
or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.



STATEMENT OF NON-COLLUSION AND NON-DISCRIMINATION

My signature certifies that the accompanying Proposal:

1. Is not the result of, or affected by, an unlawful act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under current local, state, and/or federal ordinances, statutes, regulations and/or policies. Furthermore, I understand that fraud and unlawful collusion are crimes under Federal Law, and can result in fines, prison sentences, and civil damage awards.
2. During the performance of any contract awarded, the Seller will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, or handicaps, except where religion, sex or national origin is a bona fide occupation qualification reasonably necessary to the normal operations of the Seller, The Seller agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.
3. The Seller, in all solicitations or advertisements for employees placed by or on behalf of the Seller, will state that such Seller is an equal opportunity employer.
4. Notices, advertisements and solicitations placed in accordance with Federal Law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
5. The Seller shall include the provisions of the foregoing paragraphs 2, 3 and 4 in every subcontract or purchase order over \$10,000.00 so that the provisions will be binding upon each subcontractor or vendor.

I hereby certify that I am authorized to sign as a Representative for the Seller:

NAME OF SELLER:

ADDRESS:

CITY & STATE:

NAME: (Print)

Signature:

TITLE: _____ DATE: _____

TELEPHONE: _____ FAX: _____

EMAIL ADDRESS: _____

RESIDENT/NONRESIDENT CERTIFICATION

Texas Government Code Chapter 2252 relates to bids by nonresident contractors. The pertinent portions of the Act are as follows:

Section 2252.001(3)

“Nonresident bidder” means a bidder who is not a resident (of the State of Texas).

Section 2252.001(4)

“Resident bidder” means a bidder whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

Section 2252.002

A governmental entity may not award a governmental contract to a nonresident bidder unless the nonresident underbids the lowest bid submitted by a responsible resident bidder by an amount that is not less than the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in the state in which the nonresident’s principal place of business is located.

I certify that _____ is a

Resident Bidder of Texas as defined in Texas Government Code Section 2252.001(4).

Signature: _____

Printed Name: _____

.....

I certify that _____ is a

Nonresident Bidder of Texas as defined in Texas Government Code Section 2252.001(3) and our principal place of business is:

City and State: _____

Signature: _____

Printed Name: _____

If the Bidder is a Nonresident Bidder of Texas, please answer the following:

Does the vendor’s ultimate parent company or majority owner employ at least 500 persons in Texas?

Yes _____ No _____

DEBARMENT OR SUSPENSION CERTIFICATION FORM

Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

By submitting this offer and signing this certificate, this Proposer:

- (1) Certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

Firm’s Name: _____

Address: _____

City/State/Zip: _____

Telephone: _____

Authorized Company Official’s Name: _____
(*Typed or printed*)

Title of Authorized Representative: _____
(*Typed or printed*)

Signature of Authorized Company Official: _____

Date Signed: _____



CERTIFICATIONS REQUIRED AS OF SEPTEMBER 1, 2017

**CERTIFICATION REGARDING TERRORIST ORGANIZATIONS
& BOYCOTTING OF ISRAEL
[Govt Code 808 (HB89) and Govt Code 2252 (SB252)]**

Vendor hereby certifies that it is not a company identified on the Texas Comptroller's list of companies known to have contracts with, or provide supplies or services to, a foreign organization designated as a Foreign Terrorist Organization by the U.S. Secretary of State.

Vendor further certifies and verifies that neither Vendor, nor any affiliate, subsidiary, or parent company of Vendor, if any (the "Vendor Companies"), boycotts Israel, and Vendor agrees that Vendor and Vendor Companies will not boycott Israel during the term of this Agreement. For purposes of this Agreement, the term "boycott" shall mean and include terminating business activities or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory.

Initials of Authorized Representative of Vendor

Vendor's Name/Company Name: _____

Address, City, State, and Zip Code: _____

Phone Number: _____ Fax Number: _____

Printed Name and Title of Authorized Representative: _____

Email Address: _____

Signature of Authorized Representative: _____

Date: _____ Federal Tax ID # _____

MISD PURCHASING OFFICE (INTERNAL REVIEW): SB 2252 Certification

Comptroller List was reviewed and The Vendor (IS) (IS NOT) on the lists (Circle one).

Verified by: _____

SECTION B

CERTIFICATE OF INSURANCE



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:		
	PHONE (A/C, No, Ext):	FAX (A/C, No):	
	E-MAIL ADDRESS:		
	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A :		
	INSURER B :		
INSURED	INSURER C :		
	INSURER D :		
	INSURER E :		
	INSURER F :		

COVERAGES**CERTIFICATE NUMBER:****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE \$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence) \$
							MED EXP (Any one person) \$
							PERSONAL & ADV INJURY \$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE \$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG \$
	OTHER:						\$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident) \$
	☐ ANY AUTO						BODILY INJURY (Per person) \$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident) \$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident) \$
							\$
	UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE \$
	EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE \$
	DED ☐ RETENTION \$ ☐						\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						☐ PER STATUTE ☐ OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	☐ Y ☐ N	N/A				E.L. EACH ACCIDENT \$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$
							E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

SECTION C

BONDS

PAYMENT BOND

BOND NO. _____

STATE OF TEXAS §
COUNTY OF _____§

KNOW ALL MEN BY THESE PRESENTS:

That _____ of the City
of _____, County of _____, State of _____,
(hereinafter referred to as "Principal"), and _____
(hereinafter referred to as "Surety"), authorized under the laws of the State of Texas to
act as surety on bonds for principals, are held and firmly bound unto Midlothian I.S.D.
(hereinafter referred to as "Owner") in the penal sum of _____

for the payment whereof, the said Principal and Surety bind themselves, and their heirs,
administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written contract with the
Owner, dated the _____ day of _____, 20____, to construct PARKING
LOT IMPROVEMENTS TO SERVE VITOVSKY ELEMENTARY SCHOOL which contract is
hereby referred to and made a part hereof as fully and to the same extent as if copied
at length herein.

NOW, THEREFORE, the condition of this obligation is such, that if the bond
guarantees the full and proper protection of all claimants supplying labor and material in
the prosecution of the work provided for in said contract and for the use of each claimant,
and that conversely should the Principal faithfully perform said contract and in all respects
duly and faithfully observe and perform all and singular the covenants, conditions, and
agreements in and by said contract agreed to by the Principal, and according to the true
intent and meaning of said contract and the claims and specifications hereto annexed,
then this obligation shall be void; otherwise, to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the
provisions of Chapter 2253 of the Texas Government Code, Public Work Performance
and Payment Bonds, as amended, and Chapter 53.201 of the Texas Property Code, and
all liabilities on this bond shall be determined in accordance with the provisions of said
Article to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that no change, extension of time,
alteration or addition to the terms of the contract, or to the work performed thereunder, or
the plans, specifications, or drawings accompanying the same, shall in any affect its
obligation on this bond, and it does hereby waive notice of any such change, extension of
time, alteration or addition to the terms of the contract, or to the work to be performed
thereunder.

IN WITNESS WHEREOF, the said Principal and surety have signed and sealed this instrument on this the _____ of _____, 20__.

PRINCIPAL

By: _____

Title: _____

Address: _____

SURETY

By: _____

Title: _____

Address: _____

The name and address of the Resident Agent of Surety is:

PERFORMANCE BOND

BOND NO. _____

STATE OF TEXAS §
COUNTY OF _____§

KNOW ALL MEN BY THESE PRESENTS:

That _____ of the City
of _____, County of _____, State of _____,
(hereinafter referred to as "Principal"), and _____
(hereinafter referred to as "Surety"), authorized under the laws of the State of Texas to
act as surety on bonds for principals, are held and firmly bound unto Midlothian I.S.D.
(hereinafter referred to as "Owner") in the penal sum of _____

for the payment whereof, the said Principal and Surety bind themselves, and their heirs,
administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written contract with the
Owner, dated the _____ day of _____, 20____, to construct PARKING
LOT IMPROVEMENTS TO SERVE VITOVSKY ELEMENTARY SCHOOL which contract is
hereby referred to and made a part hereof as fully and to the same extent as if copied
at length herein.

NOW, THEREFORE, the condition of this obligation is such, that if the said
Principal fully and faithfully executes the work and performance of the contract in
accordance with the plans, specifications, and contract documents, including any extensions
thereof, and according to the true intent and meaning of said contract and the plans and
specifications hereto annexed, then this obligation shall be void; otherwise, to remain in
full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the
provisions of Chapter 2253 of the Texas Government Code, Public Work Performance
and Payment Bonds, as amended, and Chapter 53.201 of the Texas Property Code, and
all liabilities on this bond shall be determined in accordance with the provisions of said
Article to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that no change, extension of time,
alteration or addition to the terms of the contract, or the work performed thereunder, or
the plans, specifications, or drawings accompanying the same, shall in anyway affect its
obligation on this bond, and it does hereby waive notice or any such change, extension of
time, alteration or addition to the terms of the contract, or to the work to be performed
thereunder.

IN WITNESS WHEREOF, the said Principal and surety have signed and sealed this instrument on this the _____ of _____, 20__.

PRINCIPAL

By: _____

Title: _____

Address: _____

SURETY

By: _____

Title: _____

Address: _____

The name and address of the Resident Agent of Surety is:

MAINTENANCE BOND

BOND NO. _____

STATE OF TEXAS §
COUNTY OF _____§

KNOW ALL MEN BY THESE PRESENTS:

THAT, _____, hereinafter called CONTRACTOR, as principal, and _____, a corporation organized under the laws of the State of Texas, as surety, do hereby acknowledge themselves to be held and bound to pay unto the Midlothian I.S.D., chartered by virtue of the Constitution and Laws of the State of Texas, at Midlothian, in Ellis County, Texas, the sum of _____ lawful money of the United States, for the payment of which sum well and truly to be made unto said Midlothian I.S.D. and its successors, said CONTRACTOR and surety do hereby bind themselves, their heirs, executors, administrators, assigns and successors, jointly and severally.

This obligation is conditioned, however; that,

WHEREAS, said CONTRACTOR has this day entered into a written Contract with the Midlothian I.S.D., Texas, the OWNER, dated the _____ day of _____, 20____, a copy of which is attached hereto and made a part hereof, PARKING LOT IMPROVEMENTS TO SERVE VITOVSKY ELEMENTARY SCHOOL which this contract is hereby referred to and made a part hereof as fully and to the same extent as if copied verbatim herein, such project and construction in the City of Midlothian, which Contract and Specifications therein mentioned adopted by the Midlothian I.S.D. are expressly made a part hereof, as though written herein in full; and,

WHEREAS, in said Contract, CONTRACTOR binds itself to use such materials and to so construct the work that it will remain in good repair and conditions for and during the period of two (2) years after the date of final acceptance of the work by the District, and,

WHEREAS, said CONTRACTOR binds itself to maintain said work in good repair and condition for said term of two (2) years; and,

WHEREAS, said CONTRACTOR binds itself to repair or reconstruct the work in whole or in part at anytime within said period, if in the opinion of the District or ENGINEER, it be necessary; and,

WHEREAS, said CONTRACTOR binds itself, upon receiving notice of the need thereof to repair or reconstruct said work as herein provided.

NOW, THEREFORE, if said CONTRACTOR shall keep and perform its said agreement to maintain, repair or reconstruct said work in accordance with all the terms and conditions of said Contract, these presents shall be null and void, and have no force or effect. Otherwise, this Bond shall be and remain in full force and effect, and said District shall have and recover from the said CONTRACTOR and its surety damages in the premises as prescribed by said Contract.

This obligation shall be a continuing one and successive recoveries may be had hereon for successive breaches until the full amount hereof is exhausted.

IN WITNESS WHEREOF,_____has caused these presents to be executed in five counterparts by its authorized _____ and said _____ has caused these presents to be executed in five counterparts by its Attorney In Fact and attested by its corporate seal, this _____ day of _____, 20__.

CONTRACTOR

By:_____

SURETY

By:_____
ATTORNEY IN FACT

WITNESS:

(SEAL)

SECTION D

GENERAL CONDITIONS

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



Issued and Published Jointly by



Endorsed by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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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

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

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 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 consider 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, expeditors, 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 do so (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.

14.07 *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.

SECTION E

SUPPLEMENTARY CONDITIONS

SECTION E - SUPPLEMENTARY CONDITIONS

SECTION E

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700, 2013 ed.) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

NUMERICAL DESIGNATIONS OF THE FOLLOWING SECTIONS CORRELATE TO THE AMENDED SECTIONS OF THE GENERAL CONDITIONS.

1.01 DEFINED TERMS

The terms used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract (EJCDC C-700, 2013 ed.) have the meanings assigned to them in the General Conditions.

Contract Time – Is defined as a calendar day including weekends and holidays.

2.05 INITIAL ACCEPTANCE OF SCHEDULES

The ENGINEER may give final approval to schedules as submitted in accordance with Paragraphs 2.05 of the General Conditions or as determined in the Preconstruction Conference without convening a separate conference for that purpose, and will so notify the CONTRACTOR.

3.01 INTENT

Add the following language after the second sentence of Paragraph 3.01.B of the General Conditions:

“In the event there are any conflicts between the plans, the specifications or other Contract Documents the priority of interpretation will be as follows: Signed Contract Agreement, CONTRACTOR’S Proposal, Project Drawings or Plans, Supplementary Conditions, General Conditions, Project Specifications, Referenced Specifications.”

4.01 COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED

Delete Paragraph 4.01 of the General Conditions in its entirety and insert the following in its place:

“Commencement of Contract Time shall begin on the date indicated in the Notice to Proceed. OWNER may issue a Notice to Proceed at any time suitable to OWNER. The date indicated in the Notice to Proceed will be determined prior to executing the agreement.

SECTION E - SUPPLEMENTARY CONDITIONS

5.05 UNDERGROUND FACILITIES

Add the following language to the beginning of Paragraph 4.05.B of the General Conditions:

“CONTRACTOR shall contact the city water & sewer and public works departments and utility companies which have a franchise to operate in the area of the project site and shall determine the location of their facilities at or contiguous to the site and shall protect same from damage during construction.”

6.01 BONDS

Add the following language at the end of Paragraph 6.01.A of the General Conditions:

“All Bonds shall be in accordance with the provisions of Chapter 2253 of the Texas Government Code, as amended.”

Performance and Payments Bonds shall be furnished in favor of the OWNER for one hundred percent (100%) of the Contract Price. A Maintenance Bond shall be furnished in the amount of one hundred percent (100%) of the Contract Price in favor of the OWNER for a period of two (2) years and shall be executed by an approved surety company authorized to do business in the State of Texas.

6.03 CONTRACTOR'S INSURANCE

CONTRACTOR shall name the Midlothian I.S.D. as additional insured's under CONTRACTOR'S general liability policy. The commercial liability insurance form and policy may be used in lieu of comprehensive general liability form. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by laws and regulations.

5.04 Worker's Compensation, etc. under Paragraphs 5.04 of the General Conditions:

(1)	State:	Statutory
(2)	Applicable Federal (e.g., Longshoremen's)	Statutory
(3)	Employer's Liability:	\$100,000

Comprehensive General Liability (under Paragraphs 5.04 of the General Conditions):

(1)	Bodily Injury (including completed operations and products liability):	
	\$500,000	Each Occurrence
	\$1,000,000	Annual Aggregate
(2)	Property Damage:	
	\$500,000	Each Occurrence
	\$1,000,000	Annual Aggregate
	or a combine single limit of	\$1,000,000

SECTION E - SUPPLEMENTARY CONDITIONS

(3) Property Damage Liability Insurance will provide Explosion, Collapse and Underground coverage where applicable.

(4) Personal Injury, with employment exclusion deleted.

\$500,000

Annual Aggregate

Comprehensive Automobile Liability:

(1) Bodily Injury:

\$500,000

Each Person

\$500,000

Each Occurrence

(2) Property Damage:

\$250,000

Each Occurrence

or combined single limit of

\$750,000

“Umbrella” Excess Liability:

\$2,000,000 combined limit, bodily injury and property damage.

6.03 CONTRACTOR’S INSURANCE

The contractual liability required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts:

Bodily Injury:

\$500,000

Each Occurrence

Property Damage:

\$250,000

Each Occurrence

\$250,000

Annual Aggregate

6.05 PROPERTY INSURANCE

The OWNER will not obtain Insurance. The contractor must provide insurance covering the losses described in Paragraph 6.05 of the General Conditions for all work in place and materials on hand when such portions of the work are to be included in an application for payment.

7.06 SUBCONTRACTORS AND SUPPLIERS

Add the following language to the end of Paragraph 7.06 of the General Conditions:

“OWNER may furnish to any such Subcontractor, Supplier or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR in accordance with CONTRACTOR’S application for payment.”

SECTION E - SUPPLEMENTARY CONDITIONS

7.17 INDEMNIFICATION OF OWNER BY CONTRACTOR

Delete Paragraphs 7.17 and 7.19 of the General Conditions and inset the following in its place:

CONTRACTOR ASSUMES ENTIRE RESPONSIBILITY AND LIABILITY FOR, AND AGREES TO RELEASE, DEFEND, INDEMNIFY AND HOLD OWNER, OWNER'S AGENTS, EMPLOYEES, REPRESENTATIVES AND INSURERS HARMLESS FROM, ANY AND ALL LIABILITIES, CLAIMS, COSTS, EXPENSES, JUDGMENTS, ATTORNEYS' FEES, LITIGATION EXPENSES, CAUSES OF ACTION, DEMANDS, LOSSES AND/OR DAMAGES ARISING OUT OF, IN CONNECTION WITH, OR IN ANY WAY INCIDENTAL TO THE PERFORMANCE OF WORK OR SERVICES UNDER THIS CONTRACT BY CONTRACTOR, CONTRACTOR'S EMPLOYEES, AGENTS, REPRESENTATIVES AND INDEPENDENT CONTRACTORS. THIS PROVISION APPLIES WITH FULL FORCE AND EFFECT FOR ANY AND ALL CLAIMS, DEMANDS, ALLEGATIONS OR ACTIONS FOUNDED IN WHOLE OR IN PART FROM THE NEGLIGENCE, GROSS NEGLIGENCE, INTENTIONAL ACTS, OR ALLEGED NEGLIGENCE, GROSS NEGLIGENCE OR INTENTIONAL ACTS, OF OWNER, OWNER'S AGENTS, EMPLOYEES, REPRESENTATIVES, AND INDEPENDENT CONTRACTORS, AS WELL AS CONTRACTOR, CONTRACTOR'S AGENTS, EMPLOYEES, REPRESENTATIVES AND INDEPENDENT CONTRACTORS. THIS INDEMNITY PROVISION IS TO BE CONSTRUED AS BROADLY AS POSSIBLE TO INCLUDE ANY AND ALL LIABILITIES, CLAIMS, COSTS, EXPENSES, JUDGMENTS, CAUSES OF ACTIONS, DEMANDS, LOSSES, AND/OR WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, CAUSES OR ACTION AND DAMAGES SOUNDING IN TORT, PERSONAL INJURIES, CONTRACT DAMAGES, ECONOMIC DAMAGES, STRICT LIABILITY, STRICT PRODUCTS LIABILITY AND PRODUCTS LIABILITY, COMMON LAW NEGLIGENCE AND GROSS NEGLIGENCE, INTENTIONAL TORTS, FEDERAL AND STATE STATUTORY AND COMMON LAW PUNITIVE AND/OR MULTIPLIED DAMAGES, WORKERS' COMPENSATION CLAIMS, CLAIMS UNDER THE TEXAS TORT CLAIMS ACT, EMPLOYMENT DISPUTES, WRONGFUL DISCHARGE, FEDERAL AND STATE CIVIL RIGHTS CLAIMS, CLAIMS FOUNDED IN CONTRACT OR QUASI-CONTRACT, BREACH OF WARRANTY, CLAIMS UNDER THE TEXAS DECEPTIVE TRADE PRACTICES-CONSUMER PROTECTION ACT, AND ANY AND ALL CLAIMS, CAUSES OF ACTION OR DEMANDS, WHEREBY ANY LOSS IS SOUGHT AND/OR INCURRED AND/OR PAYABLE BY OWNER, OWNER'S AGENTS, EMPLOYEES, REPRESENTATIVES, AND/OR INSURERS. THIS PROVISION IS TO BE CONSTRUED UNDER THE LAWS OF THE STATE OF TEXAS, AND IT IS EXPRESSLY RECOGNIZED BY ALL PARTIES TO THE CONSPICUOUSNESS REQUIREMENT AND THE EXPRESS NEGLIGENCE TEST, AND IS VALID AND ENFORCEABLE AGAINST CONTRACTOR, CONTRACTOR'S AGENTS, EMPLOYEES, REPRESENTATIVES, AND INDEPENDENT CONTRACTORS. CONTRACTOR HAS READ, FULLY UNDERSTANDS, AND AGREES TO BE BOUND BY THE TERMS AND CONDITIONS OF THIS PROVISION AND THE INDIVIDUAL SIGNING THIS CONTRACT ON BEHALF OF CONTRACTOR HAS FULL AUTHORITY TO BIND CONTRACTOR TO THIS CONTRACT AND THIS INDEMNITY PROVISION CONTAINED HEREIN. IT IS FURTHER RECOGNIZED AND AGREED THAT, SHOULD ANY PARTICULAR PORTION OR PROVISION OF THIS INDEMNITY PROVISION BE HELD INVALID, VOID AND/OR UNENFORCEABLE, IT SHALL NOT EFFECT THE VALIDITY AND ENFORCEABILITY OF THE REMAINDER OF THIS PROVISION.

SECTION E - SUPPLEMENTARY CONDITIONS

CONTRACTOR AGREES TO MAINTAIN AT CONTRACTOR'S SOLE COST AND EXPENSE, INSURANCE OF ANY AND ALL TYPE AND WITH MINIMUM LIMITS AS FOLLOWS, AND FURNISH CERTIFICATES TO OWNER EVIDENCING SUCH INSURANCE WITH INSURERS ACCEPTABLE TO OWNER:

ALL INSURANCE COVERAGES CARRIED BY THE OWNER, WHETHER OR NOT REQUIRED HEREBY, SHALL EXTEND TO AN PROTECT OWNER, OWNER'S AGENTS, EMPLOYEES, REPRESENTATIVES, AND INDEPENDENT CONTRACTORS, TO THE FULL EXTENT OF SUCH COVERAGES AND CONTRACTOR AGREES TO NAME OWNER AS AN ADDITIONAL INSURED UNDER EACH SUCH INSURANCE COVERAGE. SAID INSURANCE SHALL APPLY TO ANY AND ALL LIABILITY OF THE CONTRACTOR, CONTRACTOR'S AGENTS, REPRESENTATIVES, EMPLOYEES, AND/OR INDEPENDENT CONTRACTORS, ARISING FROM THE INDEMNITY PROVISION IN THIS SECTION.

HOWEVER, LIABILITY OF THE CONTRACTOR, AS PROVIDED IN THIS SECTION SHALL NOT BE LIMITED BY THE INSURANCE COVERAGE REQUIRED OF CONTRACTOR IN THIS PROVISION.

10.06 UNIT PRICE CONTRACT

It is the general intention of this contract to construct the proposed improvements as shown in the plans. Lengths, sizes, and quantities shown in the plans are presumed to be accurate as shown. The contract quantities as shown in the proposal or modified by change order are presumed to be the actual quantities required to construct the work shown in the plans. CONTRACTOR shall satisfy himself that the quantities required by the plans and contract quantities are the same and shall notify ENGINEER in writing within 10 days of discovering any discrepancies in the quantities. The quantities shown in the proposal and as modified by change order will be the actual quantities paid by the OWNER for the completion of work.

13.03 UNIT PRICE WORK

Any and all Work specifically called for in the Contract Documents or which is required for the proper construction of items called for in the Contract Documents is to be performed by CONTRACTOR unless specifically indicated otherwise. The cost of all work for which there is no separate pay item in the proposal shall be included in the price for a related pay item such that work called for or required by the Contract Documents will be constructed for the Contract Price.

15.01 APPLICATION FOR PROGRESS PAYMENTS

Revise the first sentence of Paragraph 15.01.A.1 of the General Conditions to read as follows:

"At least thirty (30) days before the date...."

SECTION F

GENERAL REQUIREMENTS

SECTION F

GENERAL REQUIREMENTS

1. ABBREVIATIONS

Whenever the abbreviations defined herein occur on the plans, in the specifications, contract, bonds, advertisement, proposal or in any other document or instrument herein contemplated or to which the specifications apply or may apply, the intent and meaning shall be as shown below.

AASHTO	American Association of State Highway and Transportation Officials
Ac.	Acres
ANSI	American National Standards Institute
ASA	American Standards Association
Asph.	Asphalt
ASTM	American Society for Testing and Materials
AT&SF	Atchison, Topeka and Santa Fe Railroad
Ave.	Avenue
AWS	American Welding Society
AWWA	American Water Works Associations
B/B	Back-of-curb to Back-of-curb
Bldg.	Building
Blvd.	Boulevard
CH	Chord of Curve
CI	Cast Iron
CL	Centerline
CMP	Corrugated Metal Pipe
CO	Cleanout
Conc.	Concrete
Cond.	Conduit
Const.	Construct
Corr.	Corrugated
Cr.	Circle
Ct.	Court
Cu.	Cubic
Culv.	Culvert
CY	Cubic yard
Dia.	Diameter
DPL or DP&L	Dallas Power and Light Company
Dr.	Driveway or Drive
Elev.	Elevation
Esmt.	Easement
Exist. Or EX.	Existing
F	Fahrenheit
F/F	Face-of-curb to Face-of-curb
FH	Fire Hydrant
FL	Flowline
Ft. or ‘	Foot or Feet
Gal.	Gallon
GTE	General Telephone and Electric Company

SECTION F - GENERAL REQUIREMENTS

GV	Gate Valve
Hdwl.	Headwall
HP	Horsepower
Hr.	Hour
ID	Inside Diameter
In. or “	Inch or Inches
L	Length of Curve
Lat.	Lateral
Lb.	Pound
LF	Linear Foot or Feet
Line.	Linear
Ln.	Lane
LSG	Lone Star Gas Company
Max.	Maximum
MH	Manhole
Min.	Minimum
Mono.	Monolithic
NCTCOG	North Central Texas Council of Governments
No.	Number
OD	Outside Diameter
%	Percent
PC	Point of Curvature
PCC	Point of Compound Curvature
PI	Plasticity Index or Point of Intersection
PRC	Point of Reverse Curvature
PSI	Pounds per Square Inch
PT	Point of Tangency
PVC	Polyvinyl Chloride or Point of Vertical Curvature
PVT	Point of Vertical Tangency
R	Radius
RCCP	Reinforced Concrete Cylinder Pipe
RCP	Reinforced Concrete Pipe
Reinf.	Reinforced or Reinforcing
Rem.	Remove
Rep.	Replace
Ret.	Retaining
R/W, R-of-W, or R.O.W.	Right-of-Way
Sani, or San.	Sanitary
Sec.	Second
SD	Storm Drain
SS	Sanitary Sewer
Sq.	Square
St.	Street or Storm
Sta.	Station
Std.	Standard
SWBT or SWB	Southwestern Bell Telephone Company
SY	Square Yard
T	Tangent Length of Curve
TESCO	Texas Electric Service Company
THD or SDHPT	Texas State Department of Highways and

SECTION F - GENERAL REQUIREMENTS

Tr.	Public Transportation
UE	Terrace
UT	Underground Electric Cable
VC	Underground Telephone Cable
VCP	Vertical Curve
Vert.	Vitrified Clay Pipe
Vol.	Vertical
VPI	Volume
W	Vertical Point of Intersection
WUT Co.	Water Line
Yd.	Western Union Telegraph Company
	Yard

2. SUBMITTALS

Within fifteen days after the CONTRACTOR receives a Notice of Award the CONTRACTOR will submit the following schedules in accordance with Paragraph 2.05B of the General Conditions.

1. An estimated progress schedule showing the estimated starting and completion times, in days, from Notice to Proceed for the major components of the work. Show time for cleanup, testing and inspection on the schedule.
2. If the CONTRACTOR anticipates requesting partial payment for any incomplete lump sum items, submit a schedule showing the values of the various stages of construction for that item. The unit prices in the proposal will serve as the schedule of values used to determine partial payments. Payment for materials on hand will not be made unless the CONTRACTOR provides Lien Waivers from the supplier and insurance for the stored materials.
3. Sequence of construction plan details.

3. CONSTRUCTION NO-PAY ITEMS

All work necessary for the orderly completion of the project, but not specifically included as a pay item in the proposal shall be considered subsidiary to the Contract and no separate or additional payment will be made therefore. Construction water shall be paid for by the Contractor.

4. CONSTRUCTION PAY ITEMS

As listed in the proposal, pay items shall be measured and paid for in accordance with the applicable measurement and payment paragraphs of the Standard Specifications, or as modified in the Units used in the Proposal.

The location of proposed improvements has been identified on attached plans. No additional compensation will be allowed for more area repaired than identified on the drawings, unless approved, in writing, by the Engineer and/or the Owner.

SECTION F - GENERAL REQUIREMENTS

5. ACCESS TO SITE

The Contractor shall make every effort to complete construction and allow immediate access to adjacent property at all entrances located along the roads. Owners or tenants of improvements where access and/or entrance drives are located shall be notified at least eight (8) hours prior to the time the construction will be started at their drive-ins or entrances and informed as to the length of time driveways will be closed, which period shall not exceed six (6) hours. Owners or tenants shall be advised that they must remove vehicles parked in the street prior to construction of improvements.

No public road shall be entirely closed. It shall be the responsibility of the Contractor to maintain bypasses and detours, if necessary, and to properly light, barricade, and mark all such detours that might be required to facilitate construction of improvements within this contract.

6. TESTING AND QUALITY CONTROL

Testing of Materials

Observation of the CONTRACTOR's work to determine compliance with the plans and specifications may include testing of material installed on the project. Testing of work performed and materials furnished shall be done by an engineering testing laboratory employed and paid for by the CONTRACTOR. The CONTRACTOR shall use only materials in the work which meet the requirements of the specifications. The CONTRACTOR shall furnish, at CONTRACTOR's own expense, all necessary specimens for testing of the materials and when requested, shall furnish a complete written statement of the origin, composition, and/or manufacturer of any or all materials that are to be used in the work. All materials not conforming to the requirements of the specifications will be rejected.

Quality Control

During the construction, the OWNER reserves the right to retain the engineering testing laboratory to perform services related to checking the quality of the work being performed by the CONTRACTOR to determine if the improvements are being constructed in accordance with the plans and specifications. THIS QUALITY CONTROL SERVICE DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY WITH REGARD TO CONSTRUCTING THE WORK IN ACCORDANCE WITH THE CONTRACT. If the CONTRACTOR fails to meet specified conditions by the first test, further tests to demonstrate compliance with the contract shall be at the expense of the CONTRACTOR, and payment for the test can be withheld permanently from the CONTRACTOR's total compensation.

7. EXISTING SIGNS

Any existing signs removed by the Contractor prior to construction of improvements shall be reset at same location unless directed otherwise. Any signs damaged or lost during construction shall be replaced with new markings or buttons of the same size and type. Contractor shall provide temporary signs as may be required during the interim.

SECTION F - GENERAL REQUIREMENTS

8. UTILITIES

The CONTRACTOR will be required to use a City water meter and provide a deposit for the meter. The OWNER will not furnish electric power or any other utility required for performance of the work. CONTRACTOR shall furnish these items and the cost thereof included in the related unit prices for the work.

9. SECURITY

The CONTRACTOR will be responsible for the security of his work and survey staking for his work from the time he is given Notice to proceed until the OWNER'S final payment and acceptance of the work. Security measures taken by the CONTRACTOR shall not prevent access to the traveling public.

10. DUST CONTROL

It shall be the contractor's continuous responsibility at all times, including nights, holidays, weekends, etc., to maintain the work area relatively free of dust in a manner which will not cause inconvenience to the public. Dust control will be achieved by the application of water by sprinkling in amounts sufficient to control dust.

11. EROSION CONTROL AND DRAINAGE

It shall be the CONTRACTOR'S responsibility to maintain adequate temporary surface drainage during construction so as to prevent flooding and nuisance ponding. Where surface drainage channels are disturbed or blocked during construction, they shall be restored to their original conditions of grade and cross section after the work of construction is completed. The CONTRACTOR shall take all precautions required to prevent soil erosion during the construction. If excessive erosion occurs, the CONTRACTOR shall take immediate measures to prevent further erosion and correct the damages. The CONTRACTOR shall comply with the requirements of the Pollution Prevention Plans and the final NPDES General permits Regulations for Storm Water discharges from construction sites.

The CONTRACTOR'S attention is directed to the Code of Federal regulations (CFR) Section 33, Parts 320 through 330 concerning General Regulation Policy of the Corps of Engineers concerning "waters of the United States". The CONTRACTOR, shall avoid releasing excavated or dredged materials, construct coffer dams, or perform the work in a manner which shall violate the applicable CFR regarding 404 Permits such that an additional or separate 404 Permit is required on this project. The cost for any special improvements, or damages assessed by the Corps of Engineers due to the negligent acts of the CONTRACTOR, may be deducted from payments due to the CONTRACTOR by the OWNER.

12. INGRESS AND EGRESS

The CONTRACTOR shall do his utmost to provide ingress and egress to all existing streets and private driveways at all times. Ingress and egress shall be provided, without fail, to adjacent properties when construction is not in progress.

SECTION F - GENERAL REQUIREMENTS

13. TRAFFIC CONTROL

The CONTRACTOR shall be responsible for providing traffic control during the construction of this project consistent with the provisions set forth in the latest publication of the "Texas Manual on Uniform Traffic Control devices for Streets and Highways", issued under the authority of the "State of Texas Uniform Act Regulating Traffic on Highways", codified as Article 6701d, Vernon's Civil Statutes, pertinent sections being Section No.'s 27, 29, 30 and 31.

The CONTRACTOR shall prepare an Alternate Traffic Control Plan with details for each segment or stage of construction which requires re-routing or different controls of traffic. The Traffic Control Plan shall be drawn at a scale not less than 1"=200' unless approved by the City Engineer and such that it is legible and shall include proposed street closings, detours, barricade placements, and sign placement, including advance warning signs, and pavement markings if necessary. The Contractor shall furnish and erect suitable barricades, signs, and appropriate pavement markings to protect motorists and pedestrians, as set forth in the latest edition of the TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. The barricades, signs, and pavement markings shall be constructed, placed and adequately maintained as set forth in the Traffic Control Plan or as directed by the engineer or his/her authorized representative. Two way traffic shall be maintained on all roadways under construction at all times unless the closure is specifically approved and acknowledged in writing by the City Engineer. If it becomes necessary to detour traffic off the existing paved roadway for more than seven days, an asphalt surface shall be constructed and maintained by the contractor throughout the duration of the detour. No direct compensation will be made for the traffic control plan or for furnishing, installing and maintaining barricades, signs, pavement markings, and detours and their subsequent removal. The Alternate Traffic Control Plan will be prepared and submitted to the City Engineer prior to the Pre-construction Conference.

The CONTRACTOR will not remove any regulatory sign, instructional sign, street name sign or other sign which has been erected by the City. If it is determined that a sign must be removed to permit required construction the CONTRACTOR shall contact the Owner/City to remove the sign. In the case of regulatory signs the CONTRACTOR must replace the permanent sign with a temporary sign meeting the requirements of the above-referenced manual and such temporary sign must be installed prior to the removal of the permanent sign. If the temporary sign is not installed correctly or if it does not meet the required specifications, the permanent sign shall be left in place until the temporary sign requirements are met. When construction work is completed to the extent that the permanent sign can be reinstalled the CONTRACTOR shall again contact the Owner/City to reinstall the permanent sign and shall leave this temporary sign in place until such reinstallation is completed.

Payment for work and all associated appurtenances required for traffic control shall be considered as incidental to the cost of the project.

14. TRENCH AND SUBSURFACE CONSTRUCTION

The CONTRACTOR'S attention is directed to Federal Laws contained in the Occupational Safety and Health Act of 1970 and the standards and regulations issued thereunder. The CONTRACTOR directed to comply with these and all other applicable federal, state and local laws. It is the CONTRACTOR'S responsibility to instruct his workmen in the proper safety standards and monitor his activities to insure compliance.

SECTION F - GENERAL REQUIREMENTS

The CONTRACTOR shall provide a trench safety plan which specifically addresses and identifies the trenches to be made on this project and provides the trenching details to provide a safe work place in accordance with state law and OSHA regulations. The trench safety plan shall bear the seal and signature of a registered professional engineer licensed in the state of this project with experience in preparation of trench safety systems. The plan shall include all soils investigation and test data used by the engineer in developing the plan. The CONTRACTOR shall conduct his trenching operations in accordance with this plan. The CONTRACTOR shall be responsible for daily inspection and report documentation of trench conditions and shall provide copies of reports to the ENGINEER on a weekly basis. All costs for implementation of the trench safety plan should be included in the bid item for trench safety.

15. INSPECTION

The CONTRACTOR shall notify the Engineer of Record prior to beginning construction and shall keep their engineer informed as to the daily schedule for performance of the work. The inspectors will be available to inspect the work on any working day from 8:00 a.m. to 5:00 p.m. The CONTRACTOR will not perform work that requires inspection at any other times unless he has made prior arrangements with the Engineer

16. GUARANTY AGAINST DEFECTIVE WORK

The CONTRACTOR shall indemnify the OWNER against any repairs which may become necessary to any part of the work performed under the Contract, arising from defective workmanship or materials used therein, for a period of two (2) years from the date of final acceptance of the work, in accordance with the Performance and Maintenance Bond stipulations.

17. TREES AND SHRUBS

The CONTRACTOR shall not remove any trees or shrubs unless such removal is called for in the plans or written authorization is received from the OWNER. Trees shall not be pruned without permission from the OWNER. Any trees or other landscape features to be restored or replaced at the CONTRACTOR'S expense. Trimming or pruning to facilitate the work will be permitted only by experienced workmen in an approved manner. Pruned limbs of one-inch (1") diameter or larger shall be thoroughly treated as soon as possible with a tree wound dressing.

18. WASTE MATERIAL & EXCESS EXCAVATION MATERIALS

All unused extracted materials created during the prosecution of the work shall be considered waste material and shall be removed from the site by the Contractor and disposed of at his expense. Necessary provisions shall be made to avoid waste materials from entering existing drainage systems. The Contractor shall indemnify and save harmless the Town, all its officers, agents and employees from all suits, actions, claims of any character resulting from his arrangements for the disposal of the waste and spoil.

Excess excavation materials from the project may be disposed onsite by the Contractor based on prior approval by the Engineer. Materials unacceptable as fill material, such as large rocks, trees, asphalt, concrete, drainage facilities and any other construction debris shall be removed from this site and disposed in accordance with City, State and Federal guidelines at an approved location. There will be no separate pay for this work.

SECTION F - GENERAL REQUIREMENTS

19. SUBSIDIARY WORK

Any and all work specifically governed by documentary requirements for the project, such as conditions imposed by the Plans, the General Contract Documents or these Special Documents, in which no specific items for bid has been provided for in the Proposal, shall be considered as a subsidiary item of work, the cost of which shall be included in the price bid in the Proposal, for each bid item.

20. TECHNICAL SPECIFICATIONS

Materials and Method of Construction for all items to be constructed under this contract shall be in conformance with Contract Plans and Details, Technical Specifications (attached as part of the contract) Division 2 through Division 8 of the Standard Specifications for Public Works Construction, North Central Texas, published by the NCTCOG or if work to be completed is within the State right-of-way it shall be in accordance with TxDOT Specifications, latest edition. The standard specifications are included in the Contract Documents by reference. Copies of these specifications are not supplied to the CONTRACTOR. The CONTRACTOR can obtain copies of these specifications from the North Central Council of Governments, P.O. Box Drawer COG, Arlington, Texas 76005-5888, (817) 640-3300.

21. CLEANUP

During the construction the CONTRACTOR shall at all times keep the jobsite free from waste, debris and rubbish and shall maintain a daily routine of cleanup. All trees, stumps, slashings, brush or other debris to be removed from the site shall be disposed of in such a manner approved by the ENGINEER. Onsite burning of trees and/or trash, etc., will not be permitted. Upon completion of the work as a whole and prior to final acceptance the CONTRACTOR shall clean and remove from the site all surplus and discarded materials, temporary structures and all debris. He shall leave the site in a neat and orderly condition.

SECTION G

TECHNICAL SPECIFICATIONS

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END OF LIST

SECTION 01 57 23

TEMPORARY STORM WATER POLLUTION CONTROL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Storm Water Pollution Prevention and Pollution Control Plan as required by the Texas Commission on Environmental Quality (TCEQ), effective March 2023.
- B. Related Sections:
Section 31 00 00 - Earthwork

1.02 QUALITY ASSURANCE

- A. State Standards: Execution of the Pollution Prevention and the Pollution Control Plan shall meet all requirements set forth by TCEQ under the Texas Pollution Discharge Elimination System (TPDES) regulations.

PART 2 - PRODUCTS

NOT APPLICABLE.

PART 3 - EXECUTION

3.01 PERFORMANCE

- A. General: Implement all the requirements detailed in the Erosion Control Plan and any additional pollution prevention and control measures required by the TCEQ.
- B. The Erosion Control Plan is included as part of the construction plans. The erosion control measures shown on the plans are the minimum required for this project. The contractor shall implement additional erosion control devices as construction sequence and activities dictate.
- C. The SWPPP document (including N.O.I. and N.O.T.) that makes up the balance of the SWPPP shall be prepared by the contractor at his expense. The contractor shall be the Owner/Operator of the SWPPP and responsible for executing and filing the N.O.I. and N.O.T. and paying all fees required by TCEQ.

END OF SECTION

SECTION 02 41 13

SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

A. SECTION INCLUDES:

1. Taking down, cutting away, breaking out and removing portions of the existing site to accommodate new construction.
2. Disconnecting, capping and removing identified utilities.
3. Offsite disposal and/or salvaging for reinstallation, indicated components.

B. RELATED SECTION

1. Section 01 11 00 – Summary of Work: Instructions concerning hazardous materials
2. Section 01 50 00 – Temporary Facilities and Controls
3. Section 01 77 00 – Closeout submittal

1.02 PROJECT CONDITIONS

- A. Occupancy: Owner will occupy the buildings and will inform Contractor. Conduct demolition work in manner that will minimize need for disruption of Owner's operations.
- B. Existing Conditions: Owner assumes no responsibility for actual condition of items or structures to be demolished. Contractor shall visit the site and verify the nature and extent of demolition required. Conditions existing at time of commencement of contract will be maintained by Owner insofar as practicable.
- C. Property Protection: Contractor shall be responsible for the protection of adjoining property, including all parts of the site outside the limits of demolition and outside the limits of the new construction. Protect buildings, paving, and utilities from damage by equipment and trucks. Various utilities are identified to be protected and remain in the drawings. Other utilities are to be protected until new services are installed.

1.03 SUBMITTAL

- A. Submit demolition and removal procedures and schedule under provisions of SECTION 01 32 16 – CONSTRUCTION PROGRESS SCHEDULES.
- B. Submit record documents under provisions of SECTION 01 77 00 – CLOSEOUT SUBMITTALS. Accurately record actual locations of capped utilities and subsurface obstructions.

1.04 EXISTING CONDITIONS

- A. Conduct demolition to minimize interference with adjacent portion of site to remain.
- B. Conduct operations with minimum interference with Owner's usage of buildings. Maintain protected egress and access at all times and maintain protected egress at fire exists as required by the Fire Marshall.
- C. Underground utilities are shown on plans based on survey and city information. Contractor should assume there are underground utilities not shown on plans.

1.05 PROTECTION

- A. It is essential that there be minimal interruptions of existing utilities. Any disruption of service to the owner or adjoining properties must not be done without written notification and approval.
- B. Take care to ensure that there will be no damage to elements or portions thereof which are not required to be removed. Erect and maintain temporary shoring, bracing, and other means to safeguard the structural integrity of the existing portions of site and its parts to remain.
- C. Erect and maintain temporary bracing, shoring, lights, barricades, signs and other means to protect workers and other persons, and finishes and improvements to remain from damage; all in accordance with applicable regulatory requirements.
- D. Protect existing trees to remain. Keep area within the drip line clear of construction traffic, parking, soil contaminations, soil stockpiling, storage of materials, debris and ponding water. Locate temporary fencing around trees to remain along dripline.

1.06 REGULATORY REQUIREMENTS

- A. Conform to applicable building codes for disposal of debris.
- B. Coordinate clearing Work with Owner and utility companies. Contact utility locates, which includes DIGTESS for franchise utilities and the City for public utilities
- C. Conform with applicable portions of OSHA, including 1926.604.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Materials designated for demolition shall become the Contractor's property; remove and dispose of such materials unless otherwise indicated or specified. Sales of salvage materials are not allowed on site.
- B. Items to remain the Owner's property will be removed by him prior to the start of demolition (or will be designated on the drawings herein or to be removed and stored by Contractor). Items not so designated shall be considered debris and shall be removed and disposed of accordingly.
- C. Carefully disconnect, remove and protect items directed by the Owner to be salvaged.
- D. Transport salvaged items to on-site storage areas designated by the Owner.

PART 3 – EXECUTION

3.01 INSPECTIONS

- A. Prior to starting demolition, make inspection and report observable defects and structural weaknesses of construction designated for demolition, of adjacent structures, and of improvements to remain. If unsatisfactory conditions exist, do not commence demolition until appropriate determinations have been made.
- B. Following demolition, make inspection and report defects and structural weaknesses of items partially demolished, cut, or removed, of adjacent structures; and or improvements remaining.

3.02 PREPARATION

- A. Prevent movement or settlement of adjacent structures. Provide bracing, shoring and underpinning as required.

- B. Protect existing appurtenances, structures and landscaping which are not to be demolished.
- C. Locate, disconnect, remove and cap designated utility lines within demolition areas.
- D. Mark location of disconnected utilities. Identify utilities and indicate capping locations on Project Record Documents.

3.03 PERFORMANCE

- A. Demolition: Carry out the work carefully and in an orderly manner to minimize noise, dust and vibration. Remove all items and parts so shown and noted on the drawings and as otherwise may be required to be removed to carry out the work.
- B. Clearing:
 - 1. Remove trees, shrubs and other vegetation from within the area of the site where new construction is to be placed. Grub out roots to a depth of at least 18 inches below natural grade. Dig out and remove buried obstructions to a depth of 24 inches below natural grade or 24 inches below the intended excavation elevation, whichever is lower. Remove existing trash, debris and abandoned facilities, which are to be removed from the site.
 - 2. Remove abandoned underground utilities from within the area of the site where new construction is to be placed. Cut and cap piping and conduit encountered below grade that is outside the limits of new construction. Relocate, outside of new construction areas, utility services for buildings to remain in operation.
 - 3. Prior to the removal of any buildings, verify all the utility services are disconnected and coordinate with the Architect on protecting any building(s) to remain.
 - 3. Clear undergrowth and deadwood, without disturbing subsoil.
 - 4. Burning debris on site is not permitted.
 - 5. Remove debris, rock, fences, and extracted plant life from site.
- C. Shoring: Provide temporary shoring wherever present supports are removed or weakened. Any settling or cracking of the existing construction due to the removal of supports and faulty or insufficient shoring shall be the responsibility of the contractor and shall be repaired at no additional expense to the Owner.
- D. Material and Equipment Disposal:
 - 1. The materials and items of equipment which are noted and shown to be salvaged and re-used in new locations or re-used for patching shall be carefully removed and safely stored until ready for reinstallation.
 - 2. Other items and all debris shall become the property of the Contractor and shall be removed from the premises entirely. Under no circumstances shall debris be allowed to accumulate.
- E. Damage: Any existing construction to be left in place which is damaged by the demolition operations shall be refinished or replaced at no additional expense to the Owner. The repair of such damage shall leave the parts in a condition at least equal to that found at the start of the work.
- F. Perform demolition in accordance with ANSI 10.6 and applicable regulatory requirements.
- G. Remove items designated for demolition within the limits of work indicated and as required to perform the work. Do not remove anything beyond the limits of demolition indicated without the prior written approval of Architect. If in doubt whether to remove an item, obtain written approval prior to proceeding.
- H. If in the event hazardous materials (asbestos, PCB's etc.) are encountered during the course of the demolition work, or if it is even suspected that such materials will or have been encountered cease work immediately in the affected area and promptly notify the Owner and Architect.

- I. Remove all building foundation systems four feet (4') minimum below existing ground.
- J. Remove all trees and associate roots to 2 feet (2') minimum below existing ground.
- K. Remove all existing underground utilities within limits of demolition. Cap utilities at property line. Call for locates and use other means as deemed necessary to locate, identify and demolish.

3.04 CUTTING

- A. Make new openings neat, as close as possible to profiles indicated and only to extent necessary for new work.
- B. At concrete paving and other materials where edges of cuts and holes will remain exposed in the completed work, make cuts using power-sawing and –coring equipment. Do not over-cut at corners of cut openings.
- C. Upon completion of cutting and coring, clean remaining surfaces of loose particles and dust.

3.05 PIPES, DUCTS AND CONDUITS

- A. Remove deactivated mechanical, plumbing and sprinkler piping, ducts and electrical conduit, including fastenings, connections and other related appurtenances and accessories which would otherwise be exposed in the completed work or interfere with construction operations.
- B. Cap deactivated piping systems at points of cutoff.

3.06 CLEAN UP

- A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.

3.07 SURVEY

- A. Provide as-built survey of any foundation systems or other underground improvement exposed but left in place. Use same control as original survey and deliver to the architect in a CAD file.

END OF SECTION

SECTION 31 00 00

EARTHWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supplementary General Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Excavating, filling, backfilling, grading, and compacting of earth at the site.
 - 2. Preparation of building pad to limits shown on plans.
 - 3. Provide and stockpile topsoil on site.
 - 4. Dewatering excavations.
- B. Related Sections:
 - 1. Section 01 45 23 - Testing and Inspection Services
 - 2. Section 31 10 00 - Site Clearing

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM D 698-78 Tests Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb. Hammer and 12-in. Drop.
 - 2. ANSI/ASTM D2922 - Density of Soil in Place by the Nuclear Methods.

1.04 SUBMITTALS

- A. Submit in accordance with SECTION 01 33 23 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples: Submit a one gallon sample and material analysis results of imported topsoil from a testing laboratory indicating compliance with these specifications. Any topsoil delivered to the site which does not comply with the approved sample shall be re-tested at the Contractor's expense and replaced.
- C. Test Reports:
 - 1. Submit copies of test reports in accordance with SECTION 01 45 23 - TESTING AND INSPECTION SERVICES.
 - 2. Compaction Tests: Submit copies of compaction test reports.

1.05 QUALITY ASSURANCE

- A. Laboratory Control: On site or Imported topsoil, if required, shall be inspected and tested by an independent testing laboratory.
 - 1. Testing laboratory shall make tests of the soil from the selected source to determine that it meets the specified requirements for select fill and imported topsoil.

1.06 PROJECT CONDITIONS

- A. Temporary Sheet piling: Shore and sheet excavations to protect utilities and to prevent cave-in. Maintain sheet piling secure until permanent construction is in place. Remove sheet piling as excavations are backfilled.

- B. Drainage: Provide for adequate surface drainage during construction to keep the site free of surface water without creating a nuisance in adjacent areas.
- C. Pumping: Keep the excavations free of water at all times by pumping or other means. This shall be the responsibility of the Contractor regardless of the cause, source, or nature of the water.
- D. Protection:
 - 1. Property: Protect adjoining property, including improvements out-side the limits of the work. Protect walks, curbs, and paving from damage by heavy equipment and trucks.
 - 2. Protect benchmarks.
 - 3. Protect above and below grade utilities which are to remain.
 - 4. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation. Monitor shoring system and surrounding ground surface during construction to detect movement. If movement becomes significant, take contingency steps to brace excavation and adjacent utility lines.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. Topsoil
 - 1. Strip topsoil from limits of grading areas, clean of grass, roots, rock and debris to a depth of 6", and stockpile for placement (6" minimum) on all landscape and "open space" areas. Contractor shall investigate the site to his satisfaction to determine if suitable material is available on site to meet the specification for topsoil.
 - 2. Refer to landscape architect plans and specifications for additional topsoil requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Establish extent of excavation by area and elevation; designate and identify datum elevation.
- B. Set required lines and grades using a licensed surveyor.
- C. Maintain bench marks, monuments and other reference points.

3.02 PREPARATION

- A. Before starting excavation, establish location and extent of underground utilities occurring in work area.
- B. Notify utility companies sufficiently in advance to remove and relocate lines which are in way of excavation.
- C. Maintain, reroute or extend as required, existing utility lines to remain which pass through work area.
- D. Protect and support utility services uncovered by excavation.
- E. Remove abandoned utility service lines from areas of excavation; cap, plug or seal such lines and identify at grade.
- F. Accurately locate and record abandoned and active utility lines rerouted or extended on Project Record Documents.

- G. Upon discovery of unknown utility or concealed condition, discontinue affected work and notify Architect.
- H. Remove grass, weeds, roots and other vegetation from areas to be excavated, filled and graded. Fill stump holes and like small excavations with suitable material placed in lifts and thoroughly tamped.
- I. Scarify the subgrade soil of pavement areas to a minimum depth of 6 inches, water and recompact. Compact to 95-100% Standard Proctor in accordance with ASTM D698 (Standard Proctor), at a moisture content at of -3 to +3 percentage points of the optimum.
- J. Scarify general subgrade soils in place to a depth of 6 inches and compact to 95-100% Standard Proctor in accordance with ASTM D698 (Standard Proctor), at a moisture content at of -3 to +3 percentage points of the optimum.

3.03 EXCAVATION

- A. General: Excavate to the lines, grades and sections shown on the drawings. Allow space for the construction of forms. **All excavation shall be unclassified as required regardless of the condition or type of material encountered, including rock.**
 - 1. Cut areas accurately to the indicated cross-sections and grades. Take care to prevent excavation below the grades indicated. Any bottoms and slopes that are undercut shall be backfilled with earth fill and compacted.
 - 2. Finish the excavating required for graded areas and building pad to a tolerance of one inch above or below the rough grade.
 - 3. Remove underground obstructions except for piping and conduit which shall be handled as specified in SECTION 01 11 00 - SUMMARY OF WORK.
- B. Over cut planting and lawn areas to allow a layer of topsoil not less than 6" thick.
- C. Maintain excavations to drain and be free of excess water. Ponding of water on site will not be permitted.
- D. Exercise extreme care in grading around existing trees. Do not disturb existing grades around existing trees except as otherwise noted. When excavation through roots is necessary, and after review by Landscape Architect, perform by hand and cut roots with sharp axe, prune trees to compensate for root loss.
- E. Fill over-excavated areas under structure bearing surfaces in accordance with Architect's direction.
- F. Do not allow construction equipment to create "pumping" of soils.
- G. Stockpile excavated clean fill for reuse where directed. Remove excess or unsuitable excavated fill from site.
- H. Over excavate existing soils in saturated conditions. Stockpile wet material. Allow drying out to take place. Mix stockpiled materials with relatively dry onsite material before recompacting.

3.04 WASTING

- A. Surplus excavated material not suitable or required for embankment fill and backfill shall be wasted off site.

3.05 FILL AND BACKFILL

- A. Filling: Construct compacted fills to the lines, grades and sections shown on the drawings.
 - 1. Complete stripping and wasting operations in advance of fill construction. Proof roll, compact, and establish moisture content.

2. Deposit and mix fill material in horizontal layers not more than 8" deep, loose measurement. Manipulate each layer until the material is uniformly mixed and pulverized.
 3. Fill material shall have moisture content to at least two percentage points above (+2%) its optimum moisture content and compacted to at least 95% Standard Proctor (ASTM D698), to achieve specified compaction. If fill is too wet, dry by aeration to achieve desired moisture content. If fill is too dry, add water and mix in by blading and discing to achieve desired moisture content.
 4. Exercise care to prevent movement or breakage of walls, trenches, and pipe during filling and compaction. Place fill near such items by means of light equipment and tamp with pneumatic or hand tampers.
 5. Proof roll exposed subgrade in building and paving areas with heavily loaded dump truck (25 ton minimum) or similar acceptable construction equipment, to detect unsuitable soil conditions. Commence proof rolling operations after a suitable period of dry weather to avoid degrading acceptable subgrade surfaces. Make four passes over each section with proof rolling equipment, with the last two perpendicular to the first two.
 5. Cut out soft areas of subgrade not readily capable of in- situ compaction. Backfill and compact to density equal to requirements for subsequent backfill material.
- B. Backfilling: Construct compacted fill against and around concrete beams below finish grade.
1. Verify areas to be backfilled are free of debris, snow, ice or water, and ground surfaces are not frozen.
 2. Do not backfill until underground construction has been inspected, tested and approved, forms removed, and the excavations cleaned of trash and debris.
 2. Bring backfill to required grades by depositing material in horizontal layers not more than 10" deep, loose measurement.
 4. Site backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet or spongy subgrade surfaces.
 5. Maintain optimum moisture content of backfill materials to attain required compaction density.
 6. Make gradual changes in grade. Blend slopes into level areas.

3.06 COMPACTION

- A. Compact each layer of earth fill and backfill to the compaction and density specified.
1. Scarify the subgrade soil of pavement areas to a minimum depth of 12 inches, water and recompact. Compact to at least 95% Standard Proctor in accordance with ASTM D698 (Standard Proctor), at a moisture content at of -3 to +3 percentage points of the optimum. Scarify general subgrade soils in place to a depth of 6 inches and compact to at least 95% Standard Proctor in accordance with ASTM D698 (Standard Proctor), at a moisture content at or above the soil's optimum moisture content.
 2. Equipment for compacting shall be sheeps foot and rubber tired rollers or other compactors capable of obtaining the required density. Compact the fill with power tampers and by hand in areas not accessible to rollers.
 3. Compact each layer of fill to the density listed below as a function of the location. The required density in each case is indicated as a percentage of the maximum dry unit weight determined using the standard compaction test ASTM D 698.
 - a. Material under paving-----95-100%
 - b. Material under lawn areas-----95-100%

3.07 GRADING

- A. Site Grading: Shape and finish earthwork to bring the site to the finish grades and elevations shown on the drawings.
1. Establish grades by means of grade stakes placed at corners of units, at abrupt changes of grade, and elsewhere as may be required.

2. Rough grade for paving, and site improvements to the subgrade elevations required. Soft and unstable material which will not readily compact when rolled or tamped shall be removed and the resulting depressions filled with stable material and re-compacted.
 3. Finish grade to the finish contours and spot grades shown. Extend cuts and fills to feather out beyond the last finish contour or spot grade shown. Grade to uniform levels and slopes between points for which elevations are given, round off abrupt changes in elevation, and finish off smoothly. Finish grades shall slope away from the building in all directions to assure proper drainage.
 4. Execute erosion control measures in accordance with the Erosion Control Plan.
- B. Grading Around Trees: Where grading is required within the branch spread of trees that are to remain, perform the work as follows:
1. When trenching occurs, the tree roots shall not be cut but the trench shall be tunneled under or around the roots by hand digging.
 2. When the existing grade at a tree is below the new finished grade, and fill not exceeding 6" is required, clean washed gravel graded from 1" to 2" size shall be placed directly around the tree trunk. The gravel shall extend out from trunk on all sides a minimum of 18" and finish approximately 2" above the finished grade at the tree. Install gravel before earth fill is placed.
 3. Trees in areas where the new finished grade is to be lowered shall have re-grading work done by hand to elevation as indicated. Existing grades immediately surrounding the trunk shall not be altered except at the direction of the Architect.

3.08 PROTECTION, CLEAN-UP AND EXCESS MATERIALS

- A. Protect grades from construction and weather damage, washing, erosion and rutting, and repair such damage that occurs.
- B. Correct any settlement below established grades to prevent ponding of water.
- C. At locations where concrete or other foreign matter has penetrated or been mixed with earth, remove damaged earth and replace with clean material.
- D. Remove excess stockpiled material, debris, waste, and other material from site and leave work in clean finished condition for final acceptance. Contractor is responsible for disposal of debris and excess materials.

3.09 FIELD QUALITY CONTROL

- A. Compaction Tests: Field density testing of the select fill material under the building pad and paving shall be performed by an Independent Testing Laboratory.
 1. Testing laboratory shall make one in place density test for each 5000 sq. ft. of area per lift in general site areas, but in no case less than two tests to ensure that the specified density is obtained. For tennis courts, ball fields, track, practice fields and competition field, the testing laboratory shall make one in place density test for each 3000 sq. ft. of area per lift, but in no case less than three tests to ensure that the specified density is obtained.
 2. The cost of the full-time inspection service shall be per Specification SECTION 01 45 23 - TESTING AND INSPECTION SERVICES.

3.10 CONSTRUCTION STAKING

- A. All drives must be staked using the profiles provided in the plans in addition to the grading and dimensional control plans. The contractor shall stake all vertical curves and points of grade break in order to achieve a smooth and uniform grade throughout. Verify all grades and elevations to confirm that ADA parking spaces, walks and ramps are per plans.

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supply General Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SUMMARY

- A. Section Includes: Clearing the site of vegetation, site improvements and obstructions to make way for new work.
- B. Related Sections
 - 1. Section 31 00 00 - Earthwork.

1.03 PROJECT CONDITIONS

- A. Existing Conditions: Site is generally vacant, covered with some trees and native vegetation for the portions of the existing elementary school campus. Contractor shall visit the site and verify the nature and extent of clearing work required.
- B. Protection: Contractor shall be responsible for the protection of adjoining property and improvements outside the limits of the work. Protect paving and utilities from damage by equipment and trucks.
- C. It shall be the responsibility of the Contractor to obtain a temporary water meter and temporary sanitary sewer facilities for use during construction.
- D. Contractor shall exercise care during operations to confine dust to the immediate work area and shall employ dust control measures to ensure adequate dust control throughout demolition and construction operations.

1.04 REGULATORY REQUIREMENTS

- A. Conform to applicable building code for disposal of debris.
- B. Coordinate clearing Work with previous owner and utility companies.
- C. Conform to applicable portions of OSHA, including 1926.604.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Verify that existing plant life and features designated to remain are tagged or identified
- B. Locate and identify all paving and utilities intended to remain. Contractor shall field verify and

coordinate with Owner and respective facility owner the location and depth of existing active facilities/ utility lines within the construction limits and shall protect all such facilities from damage during construction operations. Damage to existing facilities to remain shall be repaired at the Contractor's expense for re-establishing the facilities to their pre-damaged condition.

3.02 PERFORMANCE

- A. Clearing:
 - 1. Remove trees, shrubs and other vegetation from within the area of the site where new construction is to be placed. Grub out roots to a depth of at least 18 inches below natural grade
 - 2. Dig out and remove buried obstructions to a depth of 24 inches below natural grade or 24 inches below the intended excavation elevation, whichever is lower. (Refer to landscape architect's plans and specifications)
 - 3. Remove existing trash, debris and abandoned facilities, which are to be removed from the site.
 - 4. Refer to SECTION 01 11 00 - SUMMARY OF WORK for handling of piping and conduit encountered below grade.
 - 5. Clear undergrowth and deadwood, without disturbing subsoil.
 - 6. Burning debris on site is not permitted.
 - 7. Remove debris, rock, fences, and extracted plant life from site.
- B. Reference landscape plans and specifications for limits for tree removal and pruning/trimming limits.
- C. Disposal:
 - 1. Clean up and remove from the site the stumps, logs, broken paving, rubble and debris resulting from the clearing and grubbing operations.
 - 2. Remove all traces of demolished items from the site work area and rough grade all areas that have been disturbed.
 - 3. Material to be wasted shall be legally disposed of off site, at no additional cost to Owner.
 - 4. Burning of combustible materials on the site will not be permitted.

3.03 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or regraded.
- B. Stockpile in a preapproved area on or near the site. Install erosion control around perimeter of stockpile.
- C. Reference landscape architectural plans and specifications for additional top soil requirements.

END OF SECTION

SECTION 31 23 33

TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supplementary General Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SUMMARY

- A. Work Included:
 - 1. Excavation for piped utility material.
 - 2. Provide necessary sheeting, shoring, and bracing.
 - 3. Comply with Federal, State, and local trench safety requirements.
 - 4. Prepare trench bottom with appropriate materials.
 - 5. Dewater excavation as required.
 - 6. Place and compact granular beds, as required, and backfill.
- B. Related Work Specified in Other Sections
 - 1. Section 31 10 00 – Site Clearing
 - 2. Section 31 00 00 – Earthwork
 - 3. Section 33 40 00 – Storm Drainage Utilities

1.03 PRECAUTIONS

- A. Contractor shall determine the exact location of all utilities prior to construction.
- B. Notify all utility companies when necessary to disturb existing facilities and abide by their requirements for repairing and replacing.
- C. Protect all vegetation and other features to remain.
- D. Protect all benchmarks and survey points.

1.04 COORDINATION

- A. Where the specifications conflict with the City Water and Sewer Specification and City Standard Details for water and sewer construction, the Details and Specifications shall govern in that order.

PART 2 - PRODUCTS

2.01 BEDDING AND BACKFILL MATERIALS (ASTM D2487)

- A. Reference Sitework Details and City Standard Specifications. Reference site drainage plan and NCTCOG Specification for storm drainage.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Install barriers and other devices to protect areas adjacent to construction and to provide for public safety.

- B. Protect and maintain all bench marks and other survey points.

3.02 EXCAVATION TRENCHES

- A. Perform in such a manner as to form a suitable trench in which to place the pipe and so as to cause the least inconvenience to the public.
- B. Maximum width at the crown of the pipe shall be sixteen (16") inches plus the bell diameter of the pipe, unless approved specifically by the engineer due to unusual bracing and shoring requirements. The minimum width at the crown at the pipe shall be one foot plus the pipe bell diameter.
- C. Cut pavement along neat straight lines with either a pavement breaker or pavement saw.
- D. Trench Depth: For water lines - sufficient to provide minimum cover of 42 inches over the top of the pipe; for sewer lines and storm drain lines - as shown on the plans or as specified.
- E. Align trench as shown on the plans unless a change is necessary to miss an unforeseen obstruction. Should such a change be necessary, the as-built information shall be provided to the engineer and it shall be approved by the engineer.
- F. For water pipe, the trench shall be cut six (6") inches below the bottom of the pipe. The pipe shall be embedded in six (6") inches of granular material all around.
- G. For sewer pipe, excavate six (6") inches below the bottom of pipe and fill the bottom of the trench with crushed stone or as specified by the City Standard Water & Sewer Specifications.
- H. Trenches for storm drainage pipe shall be excavated and backfilled as shown on the plans.
- I. When unsuitable soil is encountered at the trench bottom, remove it to a depth required to assure support of the pipeline and backfill to the proper grade with coarse aggregate AASHTO M-43, Size No. 2 or 3.
- J. Remove rock encountered in trench excavation to a depth of six (6") inches below the bottom of the pipe barrel, backfill with an approved material, and compact to uniformly support the pipe. In no cases shall solid rock exist within six (6") inches of the finished pipeline.
- K. When rock borings or soundings are provided, they are for information only and do not guarantee existing conditions. Make such investigations as deemed necessary to determine existing conditions. All trench excavation shall be considered "unclassified excavation", with no additional compensation.

3.03 SHEETING, SHORING AND BRACING

- A. All trench excavation shall be in accordance with OSHA Regulations and Texas State law.

3.04 USE OF EXPLOSIVES

- A. The use of explosives on this project is strictly prohibited.

3.05 DISPOSAL OF EXCAVATED MATERIAL

- A. All excess excavated material that cannot be used, or is not suitable, shall be disposed of in a manner acceptable to the Architect, at no additional cost to owner.

3.06 UNAUTHORIZED EXCAVATION

- A. No excavation outside or below the proposed lines and grades shown on the plans shall be provided unless approved by the Architect / Engineer.
- B. Backfill areas of unauthorized excavation with the type material necessary (earth, rock or concrete) to insure the stability of the structure or construction involved.

3.07 REMOVAL OF WATER

- A. Keep excavated areas free of water while work is in progress.
- B. Take particular precautions to prevent the displacement of structures or pipelines as a result of accumulated water.
- C. Discharge from dewatering activities shall not be made to any sanitary sewer system unless approved by the system operator.

3.08 OBSTRUCTIONS

- A. Obstructions shown on the plans are for information only and do not guarantee their exact locations nor that other obstructions are not present. The contractor shall determine and verify the exact location of all obstructions and utilities prior to construction.
- B. When utilities or obstructions are not shown on the plans but are present off the roadway at the location of the proposed pipeline route, the contractor may request to relocate the pipeline at no additional cost to the Owner in the roadway if necessary to avoid disturbing the utility or obstructions.
- C. Exercise due care in excavating adjacent to existing obstructions and do not disturb same.
- D. In the event obstructions are disturbed, repair or replace as quickly as possible to the condition existing prior to their disturbance. The repair or replacement shall be at no cost to the Owner.
- E. If desired by the utility company, pay for the repair or replacement work performed by the forces of the utility company or other appropriate party.
- F. If replacement or repair of disturbed obstructions is not performed after a reasonable period of time, the Owner may have the necessary work done and deduct the cost of same from payments to the contractor.

3.09 STORM SEWER BEDDING

- A. Bedding for RCB/RCP/HDPE storm sewers shall be as specified in Section 501.6, 501.23, 504 and 508 of Standard Specifications for Public Works Construction, NCTCOG and site details.

3.10 GRAVITY SANITARY SEWER BEDDING

- A. Always maintain proper grade and alignment during the bedding and tamping process.
 - 1. Any pipe dislodged during this process shall be replaced by the contractor at his expense.
 - 2. Dig bell holes to assure uniform support of the pipe.
 - 3. All bedding shall be tamped to a minimum of 95% maximum dry density.
- B. Bedding for PVC Sewers:
 - 1. Refer to Sitework Details and Standard Water and Sewer Specifications.
 - 2. Lay sewer line on six inch (6") bed of crushed stone. Place granular material to a point twelve inches (12") above top of pipe.

3.11 BEDDING FOR WATER LINES

- A. The water line shall be bedded on six (6") inches of granular material in accordance with City Water and Sewer Specifications. Compact granular material to a point six inches (6") above the top of pipe.
- B. Dig bell holes to assure uniform support throughout the entire length of pipe.

3.12 INITIAL BACKFILLING

- A. Do not begin backfilling before checking/inspecting the grade and alignment of the pipe, the bedding of the pipe, and the joints between the pipe. If backfill material is placed over the pipe before an inspection is made, reopen the trench in order for an inspection to be made.
- B. Perform backfilling by hand, together with tamping, until fill has progressed to the top of specified embedment above the pipe.
 - 1. Deposit appropriate material free from lumps, clods, frozen material or stones in layers approximately eight (8") inches thick.
 - 2. Compact by hand, or with manually operated machine tampers actuated by compressed air or other suitable means.
 - 3. Use tamps and machines of a suitable type which do not crush or otherwise damage the pipe.

3.13 FINAL BACKFILLING

- A. After placement of the granular embedment material has been achieved, perform final backfilling depending upon the location of the work and danger from subsequent settlement.
- B. Backfilling beneath existing or proposed driveways, streets, sidewalks, parking areas or any paved area:
 - 1. Use granular material to backfill trenches.
 - 2. Carefully deposit in uniform layers, not to exceed six (6") inches thick.
 - 3. Compact each layer according to Standard Proctor density of 95 percent by rolling ramming and tamping with tools suitable for that purpose in such a manner so as to not disturb the pipe. Moisture must be at least optimum during compaction.
 - 4. At 200' intervals in the trench, clay check dams shall be installed to inhibit the piping of surface and/or subsurface water. The contractor shall compact full depth two foot (2') clay check dams at each location the trench enters or exits a pavement.
 - 5. Jetting or ponding of native material backfill will not be allowed.

3.14 FIELD QUALITY CONTROL

- A. Compaction Tests: Field density testing of the completed trench backfill shall be performed by an Independent Testing Laboratory.
 - 1. The Laboratory shall make one density test for each 150 linear feet of trench, with a minimum of 1 tests per lift.

END OF SECTION

SECTION 31 32 00

SOIL STABILIZATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supplementary General Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SUMMARY

- A. Section Includes: In-place lime treatment to stabilize the subgrade under concrete and asphaltic concrete pavement, and concrete walks, which parallel drives.
- B. Related Sections:
 - 1. Section 01 45 29 – Testing Agency Services.
 - 2. Section 31 00 00 – Earthwork.
 - 3. Section 32 13 13 – Concrete Paving

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM D 698-91 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lb/ft³).
- B. Geotechnical Report
- C. TxDOT - Standard Specifications for Construction of Highways, Streets and Bridges, Texas Dept. of Highways and Public Transportation, as amended.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Lime Stabilization for Paving Subgrade
 - 1. Hydrated Lime: Type A (slurry): Per TxDOT Item 260 & 264.
- B. Soil: Upper 6" of the material in-place after the subgrade has been established, compacted, and shaped.
- C. Lime: Hydrated lime made from "high-calcium" type limestone with an unhydrated lime content a minimum of 8% by weight at 36 lbs per SY and a "free" water content not exceeding 4% by weight.

2.02 EQUIPMENT

- A. Distributor truck or tank equipped with agitator to maintain a uniform mixture of lime and water.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Insure that surfaces have been brought to approximate rough grades (plus or minus 0.10 feet). Loosen and pulverize soil to a depth of 6 inches below bottom of designated paving or slab areas,

including a distance of 24" outside perimeter of paving and 12" beyond sidewalk edge or per the plans, whichever is greater.

3.02 PERFORMANCE - PAVING SUBGRADE

- A. General: It is the primary requirement to secure a completed 6" deep subgrade of treated material containing a uniform lime mixture, free of loose areas, of uniform density and moisture content, well bound for its full depth and with a smooth surface suitable for placing subsequent paving and slabs to achieve a soils Plasticity Index of not greater than 12. Construction methods and equipment shall comply to TxDOT Item 260 & 264 for Type A treatment.
- B. Scarification: Excavate and scarify the material to be treated down to the secondary grade (proposed bottom of lime treatment). Wet or unstable material below the secondary grade shall be corrected by scarifying, adding lime and compacting to uniform stability. Then spread the excavated and scarified material to the desired cross-section. Full depth of treatment shall be 6 inches and full width shall be the entire area to be paved between points and lines located a minimum of 24" beyond pavement edges and 12" beyond sidewalk edge or per the plans, whichever is greater.
- C. Placing Lime: Add lime to the scarified material in an amount equal to 36 lbs. per sq. yd. of 6" depth of compacted subgrade or as otherwise required to reduce plasticity index to 12 or less per ASTM D421. Apply lime mixed with water to form a slurry. Spread lime only on that area where mixing operations can be completed during the same working day.
- D. Mixing: Mix the soil and lime thoroughly with suitable road mixers or other approved equipment until a homogeneous, friable mixture is obtained free from clods and lumps. Aerate or sprinkle the mixture as necessary to secure the optimum moisture content. Necessary optimum moisture content shall be the above optimum.
- E. Curing: Allow the mixture to cure for a period of from 48 to 72 hours. During the curing period keep the material moist. During this time, the section shall not be opened to vehicular traffic.
- F. Final Mixing: After the required curing time, mix the material uniformly with a rotary mixer to reduce the size of the particles so that 100% will pass a 1-3/4" sieve and 60% will pass a No. 4 sieve. Lime-soil mixture pH shall be 12.4 or greater. If not possible to attain 12.4, maximum pH attainable shall be validated by laboratory test for soil being treated.
- G. Compacting: Sprinkle the mixture as required and compact by rolling and tamping to a minimum of 95% standard density, ASTM D 698, and at a moisture content that is at or above optimum. Correct irregularities and weak spots by scarifying, adding or removing material, and re-shaping and re-compacting. Maintain the surface of the subgrade smooth, free from undulations and ruts, and to the established lines and grades.

3.03 FIELD QUALITY CONTROL

- A. Compaction Tests: Field density testing of the completed stabilized subgrade under paving shall be performed by an Independent Testing Laboratory.
 - 1. The Laboratory shall make one density test for each 5000 sq. ft. of stabilized subgrade to insure that the specified density is obtained.

END OF SECTION

SECTION 32 13 13

CONCRETE PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supplementary General Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SUMMARY

- A. Section Includes: New concrete walks, curbs and gutters, paving, approaches, and other concrete flatwork outside the building.
- B. Related Sections:
1. Section 31 00 00 - Earthwork

1.03 REFERENCES

- A. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
- B. ACI 305 - Recommended Practices for Hot Weather Concreting.
- C. ACI 306 Recommended Practices for Cold Weather Concreting.
- D. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- E. ANSI/ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- F. ASTM C309, Type II – Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- G. NCTCOG - Standard Specifications for Public Works Construction.

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain materials from same source throughout.
- C. City Standards: Street sidewalks, curbs and gutters, and approaches shall be constructed to meet or exceed the requirements of the City standard specifications (or NCTCOG) where the City standards are applicable.

1.05 SUBMITTALS

- A. Product Data: Submit concrete mix designs in accordance with SECTION 01 33 23 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Include data on joint filler, admixtures and curing compounds.

- C. Submit manufacturer's instructions under provisions of SECTION 01 33 23 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- D. Confirm proposed joint layout shown on plans; submit revised layout for approval prior to starting work.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not place pavement when base surface or ambient temperature is less than 40 degrees F, or if base surface is wet or frozen.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Portland Cements: ASTM C 150, Type I, domestic manufacture.
- B. Fly Ash: ASTM C 618, Class F or C.
- C. Fine Aggregate: ASTM C 33, washed sand with a fineness modulus of between 2.50-3.00.
- D. Coarse Aggregate: ASTM C 33, clean crushed stone or washed gravel. The nominal maximum particle size shall not exceed 1/5 of the narrowest dimension between forms or 3/4 of the minimum clear spacing between reinforcing bars.
- E. Admixture: ASTM C 494, Types "A", "D" and "E", water reducing, chloride-free admixture.
- F. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures, equal to Master Builders "Micro Air".
- G. Water: ASTM C 94, Clean and potable.
- H. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- I. Formwork:
 - 1. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
 - 2. Use flexible or curved forms for curves of a radius 100 feet or less.
 - 3. Use forms of size and strength to resist movement during concrete placement.
 - 4. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- J. Reinforcement:
 - 1. Reinforcement Bars: ASTM A 615, Grade 60, deformed.
 - 2. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60. Cut bars true to length with ends square and free of burrs. Provide with closed sleeves at one end to allow one inch movement.
 - 3. Tie Bars: ASTM A 615, Grade 60, deformed.
 - 4. Bar Supports: chairs for spacing, supporting, and fastening reinforcement bars, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from plastic to support bars at the proper depth per the details.
- K. Concrete shall meet the requirements specified in plans and specification. Paving and 5" flatwork shall be 6 sack of cement content per cubic yard with a minimum compressive strength of 4000 psi at 28 days and 3000 psi at 28 days for 4" flatwork. (Entrained Air: 3-6%, Slump: 3-5 inches, Fly Ash Replacement – 20% max).

- L. Expansion Joint Filler:
 - 1. ASTM D 1751 preformed strips of asphalt saturated cane fiberboard for joints in standard finished flatwork (walks, curbs and gutters).
 - 2. ASTM D 1752, Type I preformed strips of elastic sponge rubber compound for joints to be caulked with sealant and joints in architectural concrete flatwork.
 - 3. The use of redwood expansion joints is prohibited.
- M. Type SL Silicone Sealant for Concrete and Asphalt: Single-component, low-modulus, neutral-curing, self-leveling silicone sealant complying with ASTM D 5893 for Type SL. Product manufacturer; one of the following:
Crafco Inc.; RoadSaver Silicone SL.
Dow Corning Corporation; 890-SL.
- N. Joint Sealant Backer Rod:
 - 1. Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.
 - 2. Round Backer Rods for Cold-Applied Sealants: ASTM D 5249, Type 3, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

2.02 MIXING AND DELIVERY

- A. Measurement of concrete materials, mixing, and delivery of fresh concrete to the project shall meet the requirements of ASTM C 94. Transit-mixed concrete supplier shall have a plant with sufficient capacity and transportation facilities to assure continuous delivery at the rate required.
- B. Mix concrete in accordance with ASTM C94, Alternative No. 2, or ACI 304.
- C. Deliver concrete in accordance with ASTM C94.
- D. Select proportions for normal weight concrete in accordance with ACI 301 Method 1. Mix not less than one minute after materials are in mixer.
- E. Do not transport or use concrete after 90 minutes has expired from time of initial mixing.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify compacted subgrade is ready to support paving and imposed loads, free of frost, smooth and properly compacted.
- B. Verify gradients and elevations of base are correct, and proper drainage has been provided so that water does not stand in the area to receive paving.
- C. Beginning of installation means acceptance of existing conditions

3.02 PREPARATION

- A. Moisten base to minimize absorption of water from fresh concrete.
- B. Notify Architect, Owner, and testing laboratory, minimum 24 hours prior to commencement of concreting operations.

- C. Grade Control: Establish and maintain the lines and grades for concrete site work items by means of line and grade stakes. Complete any fine grading required to prepare the subgrade. Maintain the finished subgrade cushions in a satisfactory condition.

3.03 INSERTS AND ACCESSORIES

- A. Make provisions for installation of inserts, accessories, anchors, and sleeves.

3.04 INSTALLATION

- A. Forming: Set forms to lines and grades, and brace and secure to withstand wet concrete without deflection or leakage. Stake forms securely in position with joints keyed to prevent relative displacement. Clean and oil forms each time they are used. Refer to Section 03 11 00 for additional installation requirements.
 - 1. Walks: 4" – 5" thick. Surfaces shall be crowned or sloped to drain.
 - 2. Curbs and Gutters: As detailed.
 - 3. Paving, Drive Approaches: Thicken edges as required.
 - a. 6" thick – Medium-Duty Parking Areas (Parking Areas, Drives and Fire Lanes)
 - c. 7" thick – Service and Dumpster Areas
- B. Reinforcing: Install reinforcing to meet the requirements of SECTION 03 2000 - CONCRETE REINFORCEMENT. Where reinforcement is not specifically detailed, reinforce pavement and flatwork with #3 rebars at 18" o.c. each way.
- C. Concrete: Place concrete to meet the requirements of SECTION 03 3000 - CAST-IN-PLACE CONCRETE.
 - 1. Place concrete in accordance with ACI 301 and 304. Deposit concrete so that specified slab thickness will be obtained with use of a vibratory screed and finishing operations. Minimize handling to prevent segregation. Consolidate concrete by suitable means to prevent formation of voids or honeycombs. Exercise care to prevent disturbance of forms and reinforcing and damage to vapor retarder. Place concrete to lines and levels shown, properly sloped to drain into adjacent yard areas or drainage structures. **Concrete shall be placed using a walk behind screed machine (Magic Screed). In addition, a backpack vibrator shall be used. A minimum of two (2) screed machines and two (2) backpack vibrators shall be present during all concrete pours.** The surface shall be troweled and edged with a steel trowel and then broomed to obtain a smooth, uniform brush finish.
 - 2. Hot Weather Placement: ACI 305.
 - 3. Cold Weather Placement: ACI 306.
 - 4. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
 - 5. Place concrete continuously between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.
 - 6. **The Contractor shall not back over the steel at any time while pouring concrete. Construction sequencing efforts shall be utilized in order to successfully make each concrete pour. If necessary, the Contractor shall utilize concrete pumping to perform the work.**
- D. Expansion Joints: Locate expansion joints around fixed objects within or abutting concrete, and at intervals of not more than 35 ft. o.c. along walks and curbs and 150 ft. o.c. along drive and parking paving unless otherwise shown on the plans.
 - 1. Install preformed filler with the top edge approximately 1/4" below the finished concrete surface to leave a neat, straight joint.
 - 2. Joints shall be 1/2" wide unless specifically dimensioned otherwise on the drawings. Joint edges shall be rounded with an edging tool.
 - 3. There shall be no connection by reinforcement or keyway across expansion joints. Joints shall be held in alignment with sleeved, smooth dowels where required.

4. The use of redwood expansion joints is prohibited.

E. Scoring:

1. Saw cut walks, approaches, and paving using an abrasive or diamond blade. Cut joint width shall be 1/8" and depth shall be 1/4" deep at walks and 1/3 slab thickness at approaches and paving. Cutting of joints must be done as soon as concrete surface is firm enough not to be torn or damaged by the blade (within 4 to 12 hours), and before random shrinkage cracks can form in the concrete slab.
 - a. Score walks at approximately 5-foot intervals each way. Where walks abut curbs, the scoring of walks and curbs shall align.
 - b. Score curbs and gutters at approximately 5-foot intervals. Score curbs to match paving sawcuts.
 - c. Score approaches and paving at approximately 12-foot intervals each way or as shown.

F. Standard Finishing: Strike slabs off true by double screeding to the required level at or below the elevations and grades shown on the drawings. Set edge forms and screed strips accurately to produce the designated elevations and contours.

1. Walks: Float with wood floats to true planes with no coarse aggregate visible. Hand trowel to produce smooth surfaces. Brush surfaces with a soft fiber brush to produce a uniformly striated finish. Edge concrete surfaces with a rounded edging tool.
2. Curbs and gutters: All curbs shall be formed and finished with a preformed mechanical mule. No hand formed curbs shall be allowed except in those areas that require transitioning to a laydown curb, inlet or radii less than 4 feet. Cross brush surfaces with a soft fiber brush to produce a fine brush finish.
3. Approaches: Screed and float to a monolithic medium float finish and belt with a canvas belt to produce a herringbone texture finish.
 - a. Curb Ramps: Provide tooled grooves with chemical staining of concrete as detailed.

G. Curing:

1. Cure concrete 7 days. Coat exposed surfaces with **white pigmented curing compound** for pavement areas and **clear curing compound** for sidewalk/flatwork areas. Protect surfaces from pedestrian and vehicular traffic during the curing period. Damaged areas shall be re-sprayed. Curing compound shall conform to the specifications of ASTM C309, Type 2.
2. Removing Forms: Forms shall remain in place for at least 12 hours after concrete has been placed and finished. Remove forms without damaging the concrete. Bars and heavy tools shall not be used to pry against the concrete in removing the forms. Backfill all curbs.

3.05 FIELD QUALITY CONTROL

A. Concrete Tests: Testing and acceptance of concrete shall meet the requirements specified in the plans and specifications and by the geotechnical firm.

B. Grade and Smoothness Tests:

1. Plan Grade: Finished surface of the flatwork shall not vary more than 0.04 ft. above or below the plan grade or elevation. Finished surfaces of abutting pavement and walks shall coincide at their juncture. Where a new pavement or walk abuts an existing surface, transition pavement or walk strip shall be installed.
2. Surface Smoothness: Finished surface of the flatwork shall have no abrupt changes of more than 1/8" and shall not deviate from the testing edge of a 12 ft. straight edge more than 1/4" plus or minus tolerance. Flow line of gutters shall not deviate from the testing edge of a 10 ft. straight edge more than 1/8" plus or minus tolerance.

- C. **Concrete Cracking:**
Contractor is responsible for controlling all concrete cracking. If more than one (1) crack per panel occurs, the Contractor may be required to remove and replace the panel as directed by the Engineer or Owner.

3.06 CLEANING

- A. Remove debris, scraps, surplus materials, tools and equipment from the premises upon completion of the work. Clean concrete droppings from walks and curbs. Leave the graded areas free of debris and rubble.

3.07 PROTECTION

- A. Immediately after placement, protect concrete under provisions of SECTION 01 50 00 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. The pavement shall be closed to all traffic, including vehicles of the Contractor, until the concrete is at least 7 days old or has attained a minimum average of 3,000 psi compressive strength. Repair any damage to the pavement prior to the acceptance by Owner at no additional cost to the Owner. This does not relieve the Contractor from the normal liabilities, and maintenance responsibilities, implied or otherwise, for the pavement or other items.

END OF SECTION

SECTION 32 17 23

PAVEMENT MARKINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supplementary General Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SUMMARY

- A. Section Includes: Pavement marking on Portland Cement Concrete Pavement.
- B. Related Sections:
 - 1. Section 32 13 13 - Concrete Paving

1.03 REFERENCES

- A. Federal Specification (FS):
 - 1. FS - TT-P-115E Paint, Traffic, Highway, White and Yellow.

1.04 PROJECT CONDITIONS

- A. Environmental Requirements Apply paint when ambient temperature is 50°F. or above, and relative humidity is below 85%.

1.05 QUALITY ASSURANCE

- A. Installer: Shall have a minimum of 2 years experience in the layout and striping of parking lots.
- B. Job Conditions: Do not apply marking paint when weather is foggy or rainy, or ambient or pavement temperatures are below 40 degrees F., nor when such conditions are anticipated during eight hours after application.

1.06 SUBMITTALS

- A. Submit manufacturer's product data and installation instructions.
- B. Substitutions: Submit in accordance with SECTION 01 60 00 - PRODUCT REQUIREMENTS.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Traffic Paint: Fed. Spec. TT-P-115E, Type III alkyd-chlorinated rubber-chlorinated paraffin marking paint. Striping colors per plans and city requirements. Provide Premium Chlorinated Rubber Base Paint as manufactured by Highway Signs & Paint, Inc. (phone 214 446-1605), or approved equivalent.
- B. Cleaning Solvent: VM & P Naphtha.

2.02 EQUIPMENT

- A. Applicators: Hand-operated push type marking machine or conventional airless spray equipment with guide lines and templates.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Surface Conditions: Clean and dry free from dirt, loose paint, oil, grease, wax, and other contaminants.
 - 1. Asphalt Surfaces: Allow asphaltic concrete to cure a minimum of 48 hours prior to application of marking paint.
- B. Equipment Condition: Clean previously used paint and solvent from application equipment, using VM & P Naphtha.
- C. Paint: Stir contents thoroughly from bottom of container. Do not thin paint.
- D. Locate markings as indicated on Drawings. Provide qualified technician to supervise equipment and application of markings. Lay out markings using guide lines, templates and forms.
- E. Allow paving to cure before painting as required by manufacturer of traffic paint.
- F. Allow protective coating to cure a minimum of 48 hours prior to application of traffic paint.

3.02 APPLICATION

- A. Using approved equipment, apply paint to a minimum thickness of 15 mils. Stripes shall be 4" wide. Marking edges of stripes and symbols shall be sharply outlined.

END OF SECTION

SECTION 32 19 00

WALK, ROAD, AND PARKING APPURTENANCES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supplementary General Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

1.02 WORK INCLUDED

- B. Provide and install handicapped parking signs and traffic directional signs.

1.03 REFERENCES

- A.. American Society for Testing and Materials (ASTM):
 - 1. ASTM A 591 Steel Sheet, Cold-Rolled, Electrolytic Zinc- Coated.
 - 2. ASTM B 209 Aluminum and Aluminum-Alloy Sheet and Plate.
 - 3. ASTM C 33 Concrete Aggregates
 - 4. ASTM C 150 Portland Cement
- B. Military Specifications (Mil. Spec.):
 - 1. Mil. Spec. MIL-R-13689A

1.04 SUBMITTALS

- A. Product Data: Submit in accordance with SECTION 01 33 23 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES. Include catalog, cuts of each type of sign and manufacturer's installation instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle signs in accordance with SECTION 01 60 00 – PRODUCT REQUIREMENTS and in manufacturer's cartons. Store off ground on planking. Cover with non-staining plastic.

1.06 PROJECT CONDITIONS

- A. Coordinate installation of signs with work of other trades.
- B. Location of signs shall be in accordance with City and State requirements. Signs shall be positioned not to conflict with automobile or pedestrian traffic.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. Site signs: As manufactured by Sa-So (Sargent-Sowell, Inc.) 525 N. Great Southwest Parkway, Grand Prairie, Texas 76011 (phone 972-641-4911), or approved equivalent.

2.02 MATERIALS

- A. Sign Materials: Aluminum Sheets: ASTM B 209, alloy 6061 T6, degreased and etched, 0.080" thickness. Sign faces shall be fully reflectorized with material conforming to Mil. Spec. MIL-R-13689A.
- B. Bolts, Nuts, Washers, and Clamps: Cadmium or galvanized steel. Bolts shall be a minimum of 5/16" in diameter. Clamps shall be two-piece assemblies of at least 14-gage steel or shall be an adjustable steel strap bracket.
- C. Posts: Standard galvanized steel pipe 2-3/8" in diameter and weighing not less than 2 lbs. per linear foot.
- D. Concrete: Provide concrete consisting of Portland cement (ASTM C 150), aggregates (ASTM C 33), and clean water. Mix materials to obtain concrete with a minimum 28-day compressive strength of 2500 psi, using at least 4 sacks of cement per cubic yard, 1 inch maximum size aggregate, maximum 3" slump, and 2% to 4% entrained air.

2.03 SITE SIGNS

- A. General: Site signs shall be of the quality manufactured by Sa-So and are listed by Sa-So catalog numbers for convenience in identification.
- B. Accessible Parking Signs: Reflective .080 Aluminum.
- C. Accessible Loading Zone Sign: Reflective .080 Aluminum.
- D. Traffic Signs: Reflective sheeting on 0.080" aluminum.

2.04 WHEEL STOPS

- A. Anchor each unit with minimum of two 12" long x 1/2" diameter steel rods, through unit into pavement.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Excavation: Drill holes of the size indicated for posts. Excavate holes to the depths indicated. Remove excess concrete and excavated soil from the site.
- B. Setting Posts:
 - 1. Remove all loose and foreign materials from sides and bottoms of holes, and moisten soil prior to placing concrete. Center and align posts in holes.
 - 2. Place concrete around posts in a continuous pour, and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations. Trowel finish tops of footings, and slope or dome to direct water away from posts.
- C. Attach signs to posts with bolts, washers, nuts and clamps.
- D. Clean exposed sign faces and galvanized surfaces, and leave free of defects. Use no abrasives. Leave pavement and graded area clean and free of debris.

END OF SECTION

SECTION 32 31 13

CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supplementary Conditions of the Contract, Division 1 – General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SCOPE

- A. Section Includes: Galvanized steel chain link fences and gates. Contractor shall obtain chain link fences as complete units, including necessary erection accessories, fittings and fastenings from a single source or manufacturer.

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. 0.ASTM A 153 – Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 2. ASTM A 392 – Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
 - 3. ASTM A 446 – Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
 - 4. ASTM A 569 – Specification for Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip Commercial Quality.
 - 5. ASTM A 641 – Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
 - 6. ASTM A 824 – Specification for Metallic-Coated Steel Marcellled Tension Wire for Use with Chain Link Fence.
 - 7. ASTM C 33 – Specification for Concrete Aggregates.
 - 8. ASTM C 150 – Specification for Portland Cement.
 - 9. ASTM F 567 – Practice for Installation of Chain-Link Fence.
 - 10. ASTM F 669 – Specification for Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence.
 - 11. ASTM F 900 – Specification for Industrial and Commercial Swing Gates.
 - 12. ASTM F 1083 – Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
- B. Chain Link Fence Manufacturer's Institute (CLFMI) Publications:
 - 1. Product Manual

1.04 SUBMITTALS

- A. Product Data: Submit in accordance with SECTION 01 3323 – SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. Include manufacturer's installation instructions.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide chain link fences and gates as manufactured by one of the following:
 - Allied Tube and Conduit Corp.
 - American Chain Link Fence Company
 - American Tube Company

Anchor Fence, Inc.
Capitol Wire and Fence Co., Inc.
Century Tube Corp.
Cyclone Fence Div./USX Corp.

2.02 MATERIALS

- A. Steel Fabric: Comply with Chain Link Fence Manufacturers Institute (CLFMI) Product Manual. Furnish one-piece fabric widths for fencing up to 12' high. All fencing shall have a knuckled selvage top and bottom. Wire size includes zinc coating.

a. Fabric sizes:

1. Fencing: 2-inch mesh, 0.148-inch diameter (9 gauge).

- B. Galvanized Steel Finish: ASTM A 392, Class 1, with not less than 1.2 oz. Zinc per sq.ft. of uncoated wire surface.

- C. Framing: Strength requirements for posts and rails shall comply with ASTM F 669.

- D. Pipe shall be straight, true to section, material and sizes specified and shall conform to the following weights per foot:

NPS in Inches	Outside Diameter (OD) in inches	Type I Steel (lbs./ft.)
1 ¼	1.660	2.27
1 ½	1.900	2.72
2	2.375	3.65
2 ½	2.875	5.79
3 ½	4.000	9.11
6 ⅝	6.625	18.97

- E. Steel Framework, General: Posts, rails, braces and gate frames.

1. Type I Pipe: Hot-dipped galvanized steel pipe conforming to ASTM F 1083, plain ends, standard weight (schedule 40) with not less than 1.8 oz. zinc per sq. ft. of surface area coated.

- F. End, corner and pull posts: Size as indicated on the plans.

- G. Line or intermediate posts: Size as indicated on the plans.

- H. Top & Bottom Rail: Manufacturer's longest lengths, with expansion-type couplings, approximately 6" long, for each joint. Provide means for attaching top rail securely to each gate corner, pull and end post. Size as indicated on the plans.

- I. Tension Wire: ASTM A 824, 0.177" diameter metallic-coated steel marcelled tension wire with finish to match fabric.

- J. Tie Wires: 0.148-inch diameter (9 gauge) galvanized steel or equal.

- K. Post and Line Caps: Provide weathertight closure cap for each post. Provide line post caps with loop to receive tension wire or top rail.

- L. Tension or Stretcher Bars: Hot-dip galvanized steel with minimum length 2" less than full height of fabric, minimum cross-section of 3/16" by 3/4" and minimum 1.2 oz. zinc coating per

sq. ft. of surface area. Provide one bar for each gate and end post, and two for each corner and pull post, except where fabric is integrally woven into post.

- M. Tension and Brace Bands: Minimum $\frac{3}{4}$ " wide hot-dip galvanized steel with minimum 1.2 oz. zinc coating per sq. ft. of surface area.
 - 1. Tension and Brace Bands: Minimum 12 gauge (0.105") thick.
- N. Gates:
 - 1. Gate frames shall be constructed of 2" o.d., Schedule 40 steel pipe secured at corners with malleable iron or pressed steel ells, riveted with four rivets per ell. Frame shall be hot-dip zinc coated after fabrication.
 - 2. Welded gate frames are unacceptable.
 - 3. Internal bracing shall be $\frac{3}{8}$ " diameter galvanized truss rods with tighteners.
 - 4. Hinges shall be pressed steel or malleable iron. Bottom hinge shall be a ball and socket type. All gates shall allow for a one hundred eight (180°) degree swing.
 - 5. Gates shall be equipped with a heavy duty fork-type latch with lock keeper and lock keeper guide and as indicated on the plans.
- O. Fittings: All fittings to be hot-dip zinc coated shall be 1.2 ounces of zinc per square foot of coated area.
- P. Concrete Post Footings: All concrete used shall conform to Section 03 3000 – Cast-in-Place Concrete.

PART 3 - EXECUTION

3.03 INSTALLATION

- A. General: Install fence in compliance with ASTM F 567. Do not begin installation and erection before final grading is completed.
- B. Setting Posts: Center and align posts in holes 6" above bottom of excavation. Space maximum 10' o.c. unless otherwise noted on the plans. Protect portion of posts above ground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations. Extend concrete footings 2" above grade and trowel to a crown to shed water.
- C. Top Rails: Run rail continuously through line post caps, bending to radius for curved runs and at other posts terminating into rail end attached to posts or post caps fabricated to receive rail. Provide expansion couplings as recommended by fencing manufacturer.
- D. Brace Assemblies: Install braces so posts are plumb when diagonal rod is under proper tension.
- E. Bottom Tension Wire: Install tension wire within 6" of bottom of fabric before stretching fabric and tie to each post with not less than same gage and type of wire. Pull wire taut, without sags. Fasten fabric to tension wire with 11-gage hog rings of same material and finish as fabric wire, spaced maximum 24" o.c.
- F. Tension or Stretcher Bars: Thread through or clamp to fabric 4" o.c., and secure to end, corner, pull and gate posts with tension bands spaced not over 15" o.c.

- G. Tie Wires: Use U-shaped wire of proper length to secure fabric firmly to posts and rails with ends twisted at least 2 full turns. Bend ends of wire to minimize hazard to persons or clothing.
 - 1. Maximum Spacing: Tie fabric to line posts 12" o.c. and to rails and braces 24" o.c.
- H. Fasteners: Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
- I. Fabric: All fabric shall be placed on the inside of the parking lots.

END OF SECTION

SECTION 32 84 00

PLANTING IRRIGATION

PART 1 - GENERAL

1.01 GENERAL CONDITIONS

The requirements of the "General Conditions of the Contract" and of Division 1, "General Requirements", shall apply to all work of this Section with the same force and effect as though repeated in full herein.

1.02 SCOPE OF WORK

- A. Provide all labor, materials, transportation, and services necessary to furnish and install Irrigation Systems as shown on the drawings and described herein.
- B. Related work in other sections:
 - 1. 32 92 23 SOD
 - 2. 32 93 00 TREES, SHRUBS, AND GROUNDCOVERS
- C. The term of "LICENSED IRRIGATOR" shall refer to Teague Nall and Perkins, Inc., 5237 N. Riverside Drive, Suite 100, Fort Worth, Texas 76137.

1.03 QUALITY ASSURANCE & REQUIREMENTS

- A. Permits and Fees: The Contractor shall obtain and pay for any and all permits and all observations as required.
- B. Manufacturer's Directions: Manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this contract furnish directions covering points not shown in the drawings and specifications
- C. Ordinances and Regulations: All local, municipal, and state laws, and rules and regulations governing or relating to any portion of this work are hereby incorporated into and make a part of these specifications, and their provisions shall be carried out by the Contractor. Anything contained in these specifications shall not be construed to conflict with any of the above rules and regulations or requirements of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of these specifications and drawings shall take precedence.
- D. Explanation of Drawings:
 - 1. Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and architectural features.
 - 2. All work called for on the drawings by notes or details shall be furnished and installed whether or not specifically mentioned in the specifications.
 - 3. The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention

of the Licensed Irrigator immediately. In the event this notification is not performed, the Irrigation Contractor shall assume full responsibility for any revision necessary.

1.04 SUBMITTALS

A. Material List:

1. The Contractor shall furnish the articles, equipment, or processes specified by name in the drawings and specifications. No substitution will be allowed without prior written approval by the Licensed Irrigator.
2. Complete material list shall be submitted prior to performing any work. Material list shall include the manufacturer, model number, and description of all materials and equipment to be used.
3. Equipment or materials installed or furnished without prior approval of the Licensed Irrigator may be subject to rejection, and the Contractor required to remove such materials from the site at his own expense.
4. Approval of any item, alternate, or substitute indicates only that the product or products apparently meet the requirements of the drawings and specifications on the basis of the information or samples submitted.
5. Manufacturer's warranties shall not relieve the Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.

B. Record and As-Built Drawings:

1. The Contractor shall provide and keep an up-to-date and complete "as-built" record set of blue line ozalid prints which shall be corrected daily and show every change from the original drawings and specifications, the exact "as-built" locations, sizes, and kinds of equipment. Prints for these purposes may be obtained from the Licensed Irrigator at cost. This set of drawings shall be kept on the site and shall be used only as a record set.
2. These drawings shall also serve as work progress sheets and shall be the basis for measurement and payment for work completed. These drawings shall be available at all times for inspection and shall be kept in a location designated by the Licensed Irrigator. Should the record blue line as-built progress sheets not be available for review or not up-to-date at the time of any inspection (refer to Section 3.09 - Observation Schedule), it will be assumed no work has been completed and the Contractor will be assessed the cost of that site visit at the current billing rate of the Licensed Irrigator. No other observations shall take place prior to payment of that assessment.
3. The Contractor shall make neat and legible notations on the as-built progress sheets daily as the work proceeds, showing the work as actually installed. For example, should a piece of equipment be installed in a location that does not match the plan, the Contractor must indicate that equipment has been relocated in a graphic manner so as to match the original symbols as indicated in the irrigation legend. The relocated equipment and dimensions will then be transferred to the original as-built plan at the proper time.
4. Hand drawn: In lieu of electronically drawn, before the date of the final inspection, the Contractor shall transfer all information from the "as-built" prints to a sepia Mylar, or similar Mylar material, procured from the Licensed Irrigator. All work shall be in waterproof India ink and applied to the Mylar be a technical pen made expressly for use on Mylar material. Such pen shall be similar to those manufactured by Rapidograph, Kueffell & Esser, or Faber Castell. The dimensions shall be made so as to be easily readable, even on the final controller chart (see Section C). The original Mylar "as-built" plan shall be submitted to the Licensed Irrigator for approval prior to the making of the controller chart.
5. Electronically drawn: In lieu of hand drawn, before the date of the final inspection, the Contractor shall transfer all information from the "as-built" prints to an AutoCAD

electronic file procured from the Licensed Irrigator. All work shall be documented on a unique and separate layer. The electronically drawn "as-built" plan shall be submitted to the Licensed Irrigator for approval prior to the making of the controller chart.

6. The Contractor shall dimension from two (2) permanent points of reference - building corners, sidewalks, road intersections, etc. - the location of the following items:
 - a. Connection to existing water lines
 - b. Connection to existing electrical power
 - c. Gate valves
 - d. Routing of irrigation pressure lines (dimension maximum 100' along routing).
 - e. Irrigation control valves.
 - f. Routing of control wiring.
 - g. Quick coupling valves.
 - h. Road and sidewalk borings. With a small masonry blade label each sleeve location with an "S" cut directly above all sleeve ends.
 - i. Other related equipment as directed by the Licensed Irrigator
7. On or before the date of the final inspection, the Contractor shall deliver the corrected and completed sepias to the Licensed Irrigator. Delivery of the sepias will not relieve the Contractor of the responsibility of furnishing required information that maybe omitted from the prints.

C. Controller Charts:

1. As-built drawings shall be approved by the Licensed Irrigator before controller charts are prepared.
2. Provide on (1) controller chart for each controller supplied.
3. The chart shall show the area controlled by the automatic controller and any area under a manual irrigation. The chart shall be the maximum size which the controller door will allow.
4. The chart is to be a reduced drawing of the actual as-built system. However, in the event the controller sequence is not legible when the drawing(s) is reduced, it shall be enlarged to a size that will be readable when reduced.
5. The chart shall be a black line or blue line ozalid print. A different color shall be used to indicate the area of coverage for each station.
6. When completed and approved, the chart will be hermetically sealed between two (2) pieces of plastic, each piece being a minimum 10 mils thickness.
7. These charts shall be completed and approved prior to final inspection of the irrigation system.

D. Operation and Maintenance Manuals:

1. Prepare and deliver to the Licensed Irrigator within ten (10) calendar days prior to completion of construction, two (2) hard cover binders with three (3) rings containing the followings information:
 - a. Index sheet stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturer's representative
 - b. Catalog and parts sheets on every material and equipment installed under this contract.
 - c. Guarantee statement.
 - d. Complete operating and maintenance instructions on all major equipment, i.e. the automatic controller(s).
2. In addition to the above mentioned maintenance manuals, provide the Licensed Irrigator with instructions for major equipment and show evidence, in writing, to the

Licensed Irrigator at the conclusion of the project that this service has been rendered.

E. Equipment to be Furnished:

1. Supply as a part of this Contract the following tools:

- a. Two (2) sets of special tools required for removing, disassembling and adjusting each type of irrigation head and valve supplied on this project.
- b. Two (2) five foot valve keys for operation of the ball and remote control valves.
- c. Two (2) keys for each automatic controller.
- d. One (1) quick coupler key and matching hose swivel ell for every five (5), or fraction thereof, of each type of quick coupling valve installed.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Handling of PVC Pipe and Fittings: The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC pipe and fittings. All PVC pipe shall be transported in a vehicle which allows the length of pipe to lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been damaged will be discarded and, if installed, shall be replaced with new piping.

1.06 SUBSTITUTIONS

- A. If the Contractor wishes to substitute any equipment or materials for those equipment or materials listed on the drawings and specifications, he may do so by providing the following information to the Licensed Irrigator for approval:
1. Provide a statement indicating the reason for making the substitution. Use a separate sheet of paper for each item to be substituted.
 2. Provide descriptive catalog literature, performance charts, and flow charts for each item to be substituted.
 3. Provide the amount of cost savings if the substituted item is approved.
- B. The Licensed Irrigator shall have the sole responsibility in accepting or rejecting any substituted item as an approved equal to those equipment and materials listed on the irrigation drawings and specifications

1.07 GUARANTEE

- A. The guarantee for the planting irrigation system shall be made in accordance with the attached form. The general conditions and supplementary conditions of these specifications shall be filed with the Owner and the Licensed Irrigator prior to acceptance of the irrigation system.
- B. A copy of the guarantee form shall be included in the operations and maintenance manual.
- C. The guarantee form shall be re-typed onto the Contractor's letterhead and contain the following information:

GUARANTEE FOR PLANTING IRRIGATION SYSTEM

We hereby guarantee that the planting irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse, or neglect excepted. We agree to repair or replace any defects in material or workmanship which may develop to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the Owner. We shall make such repairs or replacements within a reasonable time, as determined by the Owner, after receipt of written notice. In the event of our failure to make such repairs or replacement within a reasonable time after receipt of written notice from the Owner, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT: _____

LOCATION: _____

SIGNED: _____

COMPANY: _____

ADDRESS: _____

PHONE: (____) ____ - ____

DATE OF ACCEPTANCE: ____ / ____ / ____

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Use only new materials of brands and types noted on drawings, specified herein, or approved equals.
- B. PVC pressure main line pipe and fittings:
 - 1. Pressure main line piping for sizes 3" and larger shall be PVC Class 200 with o-ring gasket joints. All tees, ells and other fitting shall be solvent welded.
 - 2. Pressure main line piping for sizes 2 1/2" and smaller shall be PVC Class 200 with solvent welded joints.
 - 3. Pipe shall be make from NSF approved Type I, Grade II PVC compound conforming to ASTM resin specification D1784. All pipes must meet requirements as set forth in Federal Specification PS-22-70.
 - 4. PVC solvent-weld fittings shall be Schedule 40, 1-2, II-I NSF approved conforming to ASTM test procedure D2466. All male adapters shall be SCH 80 PVC.
 - 5. Solvent cement and primer for PVC solvent-weld pipe and fittings shall be of type and installation methods prescribed by the manufacturer.
 - 6. All PVC pipe must bear the following markings:
 - a. Manufacturer's name
 - b. Nominal pipe size
 - c. Schedule or class
 - d. Pressure rating in P.S.I.
 - e. NSF (National Sanitation Foundation) approval
 - f. Date of extrusion
 - 7. All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.S. schedule and NSF seal of approval.
- C. PVC Non-Pressure Lateral Line Piping:
 - 1. Non-pressure buried lateral line piping shall be PVC class 200 with solvent-weld joints.
 - 2. Pipe shall be made from NSF approved, Type I, Grade II PVC compound to ASTM resin specification D1784. All pipes must meet requirements set forth in Federal Specification PS-22-70 with an appropriate standard dimension ratio.
 - 3. Except as noted in paragraphs 1 and 2 of Section 2.01B, all requirements for non-pressure lateral line pipe and fittings shall be the same as for solvent-weld pressure main line pipe and fittings as set forth in Section 2.01B of these specifications.
- D. Copper Piping and Fittings:
 - 1. Copper piping shall be type "K" hard-drawn with "sweat" type fittings.
 - 2. Pipe and fittings shall be assembled with 50/50 soft solder and non-erosive flux. Solder shall take up capillary action and joints shall be made tight without build-up head.
 - 3. Pipe ends shall be squared, reamed to remove burrs, and cleaned bright with fine sandpaper and steel wool.
- E. Ball Valves:
 - 1. Ball valves 3" and smaller shall be similar to those manufactured by Lasco, or approved equal.
 - 2. Ball valves 3" and smaller shall have threaded ends shall be equipped with a hand lever.
 - 3. All ball valves shall be installed per installation detail and the manufacturer's recommendations.

- F. Quick Coupling Valves: Quick coupling valves shall have a brass two-piece body designed for working pressure of 150 p.s.i. operable with quick coupler. Key size and type shall be as shown on the plans.
- G. Backflow Prevention Units:
1. Backflow prevention units shall be of size and type indicated on the drawings. Install backflow prevention units in accordance with irrigation construction details.
 2. Wye strainers at backflow prevention units shall have a bronzed, screwed body with 60 mesh monel screen and shall be similar to Bailey #100B, or approved equal. Mount wye strainers sideways so they are easier to service.
- H. Automatic Drain Valves:
1. Automatic drain valves shall be plunger type, duty virgin PVC construction, with small thread inlet.
 2. Drain valve shall be installed at an angle of 30 to 45 degrees horizontal, in a direction to facilitate pipe drainage.
 3. Provide sump pit for drainage.
- I. Control Wiring:
1. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire, AWG-U.F. 600 volt.
 2. Pilot wires shall be a different color wire for each automatic controller.
 3. Common wires shall be white with a different color stripe for each automatic controller.
 4. Install in accordance with valve manufacturer's specifications and wire chart. In no case shall the wire size be less than #12 gauge.
 5. Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible.
 6. Where more than one (1) wire is placed in a trench, the wiring shall be taped together at intervals of ten (10) feet.
 7. An expansion curl shall be provided within three (3) feet of each wire connection. Expansion curl shall be of sufficient length at each splice connection at each electric remote control valve, so that in case of repair, the valve bonnet may be brought to the surface without disconnecting the control wires. Control wires shall be laid loosely in the trench without stress or stretching of control wire conductors.
 8. All splices shall be made with Scotch-Lok #3576 Connector Sealing Packs, Rain Bird Snap-Tite wire connector, or approved equal. Use one (1) splice per connector sealing pack.
 9. Field splices between the automatic controller and electrical control valves will not be allowed without prior approval of the Licensed Irrigator. All approved field splices shall be placed in a Control Valve Box and labeled appropriately.
- J. Automatic Controllers:
1. Automatic controllers shall be of size and type shown on the plans.
 2. Final location of the automatic controller shall be approved by the Licensed Irrigator.
 3. Unless otherwise noted on the plans, the 120 volt electrical power to each automatic controller location shall be furnished by the Contractor. The final electrical hook-up shall be the responsibility of the Contractor.
- K. Electrical Control Valves:
1. All electric control valves do not have to be the same manufacture as the automatic controller.
 2. All electric control valves shall have a manual flow adjustment.
 3. Furnish and install one (1) control valve box for each electric control valve.
- L. Control Valve Boxes:

1. Use 10" round box for all field splices, Oldcastle Enclosure Solutions Model 910 with green cover, or approved equal. Extension sleeves shall be 6" PVC minimum size.
2. Use 14" X 19" standard rectangular box for all gate valves and quick coupler valves, Oldcastle Enclosure Solutions Model 1419 with green, "Drop-N-Lock" lid cover, or approved equal. Extension sleeves shall be 6" PVC minimum size.
3. Use 13" X 24" jumbo rectangular box for all electric control valves, Oldcastle Enclosure Solutions Model 1324 with green, "Drop-N-Lock" lid cover, or approved equal. Extension sleeves shall be 6" PVC minimum size.

M. Irrigation Heads:

1. All irrigation heads shall be of the same size, type, and deliver the same rate of precipitation with the diameter (or radius) of throw, pressure, and discharge as shown on the drawings, or specified in these special provisions.
2. Spray heads shall have a screw adjustment.
3. Riser units shall be fabricated in accordance with the details shown on the plans.
4. Riser nipples for all irrigation heads shall be the same size as the riser opening in the irrigation body.
5. All irrigation heads of the same type shall be of the same manufacture.

PART 3 - EXECUTION

3.01 INSPECTION

A. Site Conditions:

1. All scaled dimensions are approximate. The Contractor shall check and verify all size dimensions and receive the Licensed Irrigator's approval prior to proceeding with work under this section.
2. Exercise extreme care in excavating and working near existing utilities. The Contractor shall be responsible for damages to utilities which are caused by his operations or neglect. Check existing utilities drawings for existing utility locations.
3. Coordinate installation of planting irrigation materials including pipe, so there shall be NO interference with utilities or other construction or difficulty in planting trees, shrubs, and ground covers.
4. The Contractor shall carefully check all grades to satisfy himself that he may safely proceed before starting work on the planting irrigation system.

3.02 PREPARATION

A. Physical Layout:

1. Prior to installation, the Contractor shall stake out all pressure supply lines, routing and location of irrigation heads.
2. All layout shall be approved by the Licensed Irrigator prior to installation.

B. Water Supply:

1. Planting irrigation system shall be connected to water supply points of connection as indicated on the drawings.
2. Connections shall be made at approximate locations as shown on the drawings. The Contractor is responsible for minor changes caused by actual site conditions.
3. The point of connection shall be as shown on the drawings and shall be furnished by the Contractor, unless otherwise specified.

C. Electrical Supply:

1. Electrical connections for the automatic controller shall be made to electrical points of connection as indicated on the drawings.

2. Connections shall be made at approximate locations, as shown on the drawings. The Contractor is responsible for minor changes caused by actual site conditions.

3.03 INSTALLATION

A. Trenching:

1. Dig trenches straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching excavation shall follow layout indicated on the drawings, and as noted.
2. Provide for a minimum of eighteen (18) inches cover for all pressure supply lines.
3. Provide for a minimum cover of twelve (12) inches for all non-pressure lines.
4. Provide for a minimum cover of eighteen (18) inches for all control wiring.

B. Backfilling:

1. The trenches shall be backfilled a maximum of 50% with all joints exposed until all required tests are performed. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, or other approved materials, free from large clods of earth or stones. Backfill shall be mechanically compacted landscaped areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill will conform to adjacent grades without dips, sunken areas, humps, or other surface irregularities.
2. A fine granular material backfill will be initially placed on all lines. No foreign matter larger than one-half (1/2) inch in size will be permitted in the initial backfill.
3. Flooding of trenches will always be permitted and preferred.
4. If settlement occurs and subsequent adjustments in pipe, valves, irrigation heads, lawn or planting, or other construction are necessary, the Contractor shall make all required adjustments without cost to the Owner.

C. Trenching and Backfill Under Paving:

1. Trenches located under areas where paving, asphaltic concrete or concrete, will be installed shall be backfilled with sand (a layer of six [6] inches below the pipe and three [3] inches above the pipe) and compacted in layers to 95% standard proctor, using manual or mechanical tamping devices. Trenches for piping shall be compacted to equal the compaction of the existing adjacent undisturbed soil and shall be left in a firm, unyielding condition. All trenches shall be left flush with the adjoining grade. The Contractor shall set in place, cap, and pressure test all piping under paving prior to the paving work.
2. Generally piping under existing walks is done by jacking, boring, or hydraulic driving, but where any cutting or breaking of sidewalks or concrete is necessary, it shall be done and replaced by the Contractor as part of the contract cost, to the satisfaction of the Licensed Irrigator. Permission to cut or break sidewalks or concrete shall be obtained from the Licensed Irrigator. NO hydraulic driving will be permitted under concrete paving.
3. Provide for a minimum cover of eighteen (18) inches between the top of the pipe and the bottom of the aggregate base for all pressure and non-pressure piping installed under asphaltic concrete paving.

D. Assemblies:

1. Routing of planting irrigation lines as indicated on the drawings is diagrammatic. Install lines (and various assemblies) in such a manner as to conform to the details per plans.
2. Install NO multiple assemblies in plastic lines. Provide each assembly with its own outlet.
3. Install all assemblies specified herein in accordance with the respective detail. In the absence of detail drawings or specifications pertaining to specific items required to complete the work, perform such work in accordance with the best standard practice, with the approval of the Licensed Irrigator.

4. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust, and moisture before the installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
 5. On PVC to metal connections, the Contractor shall work the metal connections first. Teflon tape, or approved equal, shall be used on all threaded PVC to PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be welded.
- E. Line Clearance: All lines shall have a minimum clearance of six (6) inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another.
- F. Automatic Controller: Install the automatic controller(s) in accordance with the manufacturer's instructions. Remote control valves shall be connected to the controller in the numerical sequence as shown on the drawings.
- G. High Voltage Wiring for Automatic Controller:
1. 120 volt electrical service for the automatic controller shall be the responsibility of the Contractor. The Contractor shall be responsible for permitting and getting the electrical utility service company to install the appropriate electrical service and meter base necessary to operate each automatic controller. The final location of the electrical meter base shall be approved by the Licensed Irrigator.
 2. 120 volt electrical service connection to the automatic controller shall be provided by the Contractor.
 3. All electrical work shall conform to local codes, ordinances, and union authorities having jurisdiction.
- H. Remote Control Valves: Install remote control valves where shown on the drawings and per the detail. When valves are grouped together, allow at least thirty-six (36) inches between valves. Install each remote control valve in a separate valve box. Each valve number (per the drawings) shall be stenciled on the valve box lid with exterior paint. Paint color shall be flat black. Stencil number size shall be 3" in height. Additionally, on each valve install a waterproof tag with the valve number legibly written. Affix to the valve using plastic tie or galvanized wire that will not impede the manual operation of the valve.
- I. Ball Valves: Install ball valves where shown on the drawings and per the detail. When valves are grouped together, allow at least thirty-six (36) inches between valves. Install each ball valve in a separate valve box. Each ball valve shall have stenciled on the valve box lid, "BV" with exterior paint. Paint color shall be flat black. Stencil letter size shall be 3" in height.
- J. Quick Coupler Valves: Install where shown on the drawings and per the detail. Install each quick coupler valve in a separate valve box. Each quick coupler valve shall have stenciled on the valve box lid, "QC" with exterior paint. Paint color shall be flat black. Stencil letter size shall be 3" in height.
- K. Flushing of the System:
1. After all new irrigation pipe lines and risers are in place and connected, all necessary diversion work has been completed, and prior to installation of the irrigation heads, the control valves shall be opened and full head of water used to flush out the system.
 2. Irrigation heads shall be installed only after flushing of the system has been accomplished to the complete satisfaction of the Licensed Irrigator.
- L. Irrigation Heads:
1. Install the irrigation heads as designated on the drawings. Irrigation heads to be installed in this work shall be equivalent in all respects to those itemized.

2. Spacing of heads shall not exceed the maximum indicated on the drawings. In NO case shall the spacing exceed the maximum recommended by the manufacturer.
- M. Field Splices: Install field splices of control valve wiring in a valve box (see Section 2.01 L.1). Each field splice valve box lid shall have stenciled "Field Splice" on it with exterior paint. Paint color shall be flat black. Stencil letter shall be 3" in height.

3.04 TEMPORARY REPAIRS

The Owner reserves the right to make temporary repairs as necessary to keep the irrigation system equipment in operating condition. The exercise of this right by the Owner shall not relieve the Contractor of his responsibilities under the terms of the guarantee as herein specified.

3.05 FIELD QUALITY CONTROL

- A. Adjustment of the System:
1. The Contractor shall flush and adjust all irrigation heads for optimum performance and to prevent overspray onto walks, roadways, and buildings as much as possible.
 2. If it is determined by the Licensed Irrigator that adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in nozzle sizes and degrees of arc as required.
 3. Lowering raised irrigation heads by the Contractor shall be accomplished within ten (10) calendar days after notification by the Licensed Irrigator.
 4. All irrigation heads shall be set perpendicular to finished grades unless otherwise designated on the drawings.
- B. Testing of Irrigation System:
1. The Contractor shall request the presence of the Licensed Irrigator, in writing, at least 24 hours in advance of the testing.
 2. Test all pressure lines under hydrostatic pressure of 150 pounds per square inch, and prove watertight. Note that the testing of pressure main lines shall occur prior to installation of the electric remote control valves.
 3. All piping under paved areas shall be tested under hydrostatic pressured of 150 pounds per square inch, and proved watertight, prior to paving.
 4. Sustain pressure in lines for not less than eight (8) hours. If leaks develop, replace joints and repeat the test until the entire system is proven watertight.
 5. All hydrostatic tests shall be made only in the presence of the Licensed Irrigator. NO pipe shall be completely backfilled until it has been inspected, tested, and approved in writing.
 6. Furnish necessary force pump and all other test equipment.
 7. When the planting irrigation system is completed, perform a coverage test in the presence of the Licensed Irrigator, to determine if the water coverage for planting areas is complete and adequate. Furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from plans, or where the system has been willfully installed, as indicated on the drawings, when it is obviously inadequate, without bringing this to the attention of the Licensed Irrigator. This test shall be accomplished before any ground cover is planted.
 8. Upon completion of each phase of work, the entire system shall be tested and adjusted to meet site requirements.

3.06 MAINTENANCE

- A. The entire planting irrigation system shall be under full automatic operation for a period of seven (7) calendar days prior to any planting.
- B. The Licensed Irrigator reserves the right to waive or shorten the operation period.

3.07 CLEAN-UP

Clean-up shall be made daily as each portion of the work progresses. Refuse and excess dirt shall be removed, all walks and paving shall be broomed or washed down, and any damage sustained on the work of others shall be repaired to the original condition.

3.08 FINAL OBSERVATION PRIOR TO ACCEPTANCE

- A. The Contractor shall operate each system in its entirety for the Licensed Irrigator, at the time of the final observation. Any items deemed not acceptable by the Licensed Irrigator shall be re-worked to the complete satisfaction of the Licensed Irrigator.
- B. The Contractor shall show evidence to the Licensed Irrigator that the Owner has received all accessories, charts, record drawings, and equipment as required before final inspection can occur.

3.09 OBSERVATION SCHEDULE

- A. The Contractor shall be responsible for notifying the Licensed Irrigator, in advance, for the following observation meetings, according to the time indicated:
 - 1. Pre-Job Conference - 7 days.
 - 2. Pressure supply line installation & testing - 48 hours
 - 3. Automatic controller installation - 48 hours
 - 4. Control wire installation - 48 hours
 - 5. Lateral line and irrigation installation - 48 hours
 - 6. Coverage test - 48 hours
 - 7. Final inspection - 7 days
- B. When observations have been conducted by other than the Licensed Irrigator, show evidence, in writing, of when and by whom these observations were made.
- C. NO site observations will commence without as-built drawings. In the event the Contractor calls for a site visit without as-built drawings, without completing previously noted corrections, or without preparing the system for the said visit, he shall be responsible for reimbursing the Licensed Irrigator at his current billing rates per hour, portal to portal (plus transportation costs) for the inconvenience. NO further site visits will be scheduled until this charge has been paid and received.

END OF SECTION

SECTION 32 92 23

SOD

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

The requirements of the "General Conditions of the Contract" shall apply to all work of this Section with the same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

- A. Furnish all labor, material, equipment, and services necessary to provide all landscape sodding, and sprigging work, complete in place, as shown on the drawings and as specified.
- B. Work specified in this Section: The work includes, but is not necessarily limited to:
 - 1. Soil preparation
 - 2. Fine grading
 - 3. Sodding (Solid rolled Sod)
 - 4. Clean-up
 - 5. Maintenance
- C. Related work in other Sections:
 - 1. 32 93 00 TREES, SHRUBS, AND GROUNDCOVERS
 - 2. 32 84 00 IRRIGATION
- D. Definition: The term of "Landscape Architect" shall refer to Teague Nall and Perkins, Inc., 5237 N. Riverside Drive, Suite 100, Fort Worth, Texas 76137.
- E. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. American Society for Testing and Materials (ASTM): D 1557 Moisture Density Relations of Soils and Soil Aggregate Mixtures Using 10 lb. (4.54 kg) Rammer and 18 in. (457mm) Drop.

1.3 SUBMITTALS

- A. Samples and Product Information: Representative samples or product information of the following materials shall be provided to the Landscape Architect from the supply source that is to be used for turf areas:
 - 1. Topsoil
 - 2. Soil Amendments
 - 3. Fertilizer: specifications and guaranteed analysis.
 - 4. Biological Amendments: ingredients, chemical analysis, and manufacturer.
 - 5. Sod certification documentation to include the following:
 - a. Kind – Bermuda 419, Common Bermuda, St. Augustine, etc.
 - b. Variety –Bermuda 419, etc.
 - c. Lot Number – If applicable
 - d. Record of square feet of sod shipped.
 - e. Bill of Lading / Invoice # - This is an invoice number that can be referenced to the purchaser of the shipment.

- f. Field # - the field number references the harvested grass to the production field. The field number must be the same as on the certification application and field inspection report.
 - g. Harvest Date – Record the date the grass was harvested.
 - h. Grower Name and Address- Record the production company name and address. Use of a stamp is acceptable if it shows on all copies.
- B. Construction Schedule: At least two weeks prior to start of work, submit sodding schedule.
- C. Maintenance: Submit three copies of typewritten instructions recommending procedures to be established by the Owner for the maintenance of the lawns for an entire year. Submit prior to Notice of Substantial Completion. See Section 3.10, 90 DAY MAINTENANCE
- D. Chemicals: Submit products, rates of application, and anticipated uses of any pesticides, herbicides, and fumigants.

1.4 QUALITY ASSURANCE

- A. Contractor's Qualifications
 - 1. The work of this section shall be performed by a Contractor specializing in sodding or landscape installations.
 - 2. The Contractor shall have successfully completed at least 5 installations of this type, size, and complexity in the last four years.
- B. Lawn materials shall comply with all government regulations prevailing at the supply source and the job site.
- C. Fertilizers; Mixed Commercial. Federal Specification: 0-F-241D

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Digging Sod
 - 1. Do not dig sod at the nursery or other approved source until ready to transport sod to the project site or approved storage location.
 - 2. Before stripping, sod shall be mowed at a uniform height of 2".
 - 3. Sod to be cut and delivered in rolled widths.
 - 4. Cut sod to specified thickness and to standard width and length desired.
- B. Transporting Sod
 - 1. Sod transported to the Project in open vehicles shall be covered with tarps or other suitable covers securely fastened to the body of the vehicle to prevent injury to the sod. Closed vehicles shall be adequately ventilated to prevent overheating of the sod. Evidence of inadequate protection against drying out in transit shall be cause for rejection.
 - 2. Sod shall be kept moist, fresh, and always protected. Such protection shall encompass the entire period during which the sod is in transit, being handled, or in temporary storage.
 - 3. Transporting sod in excess of 20 miles from the site shall be done during evening, night, early morning hours during summer months
 - 4. Upon arrival at the temporary storage location or the site of the work, sod shall be inspected for proper shipping procedures. Should the roots be dried out, the Landscape Architect will reject the sod. When sod has been rejected, the

Contractor shall remove it at once from the area of the work and replace it at no cost to Owner.

5. Unless otherwise authorized by the Landscape Architect, the Contractor shall notify the Landscape Architect at least 48 hours in advance of the anticipated delivery date of sod. A legible copy of the invoice, showing species and variety of sod included for each shipment shall be submitted to the Landscape Architect.
6. Certificate of Inspection when required must accompany each sod shipment.

C. Handling and Storage of Sod

1. No sod shall remain in temporary storage over 30 hours, and less time may be required during extremely high temperatures.
2. Sod shall be kept moist and shall be stored in a compact group to prevent drying out or freezing.
3. Contractor shall take extreme care in the handling of sod material to avoid breaking or tearing strips. Sod that has been damaged by poor handling may be rejected by the Landscape Architect.

1.6 JOB CONDITIONS

- A. Do not install sod on saturated, excessively dry, or frozen soil.
- B. Sod installation shall be subject to suitability of the weather and other conditions affecting sod growth.
- C. Planting season may be extended only with the written permission of the Landscape Architect.

1.7 SAMPLES AND TESTS

- A. The Landscape Architect reserves the right to take and analyze samples of materials for conformity to specifications at any time. The Contractor shall furnish samples upon request by the Landscape Architect. Rejected materials shall be immediately removed from the site at the Contractor's expense. Cost of the testing of materials not meeting specifications shall be paid by the Contractor.
- B. After rough grading is complete, Contractor shall order and pay for a soil test which includes recommendations. Take a minimum of one soil test per 10 acres - or more as site conditions mandate. Take approximately 15 cores from each uniform soil area. Mix them thoroughly in a clean plastic or paper container. Fill the soil sample bag one-third to one-half full from this representative sample. Acceptable labs are:
 1. TPS Lab: "SO-05, TPSL® Plant Natural™ Soil Test + LOI Organic Matter + Solvita®"
 2. A&L Plains Agricultural Laboratories: "Basic Test S2" and "Basic Test S3" and "Organic Matter – by Combustion" (all three tests are required)
- C. Submit results to Landscape Architect for adjustment to soil amendments and fertilizers.

1.8 MAINTENANCE

- A. All stored plant material shall be maintained in a healthy, vigorous condition by the Contractor. Maintenance includes, but is not necessarily limited to, mowing, weeding, edging, watering, trash removal, street and gutter cleaning, erosion repair, removal of siltation in drainage areas, and insect and disease chemical applications. The storage area shall be mowed, weeded, and trimmed weekly during the course of construction and the life of the storage area.

- B. Within the limits of construction, the site shall be maintained in a neat, well-kept appearance by the Contractor. Maintenance includes, but is not necessarily limited to, mowing, weeding, edging, watering, trash removal, street and gutter cleaning, erosion repair, removal of siltation in drainage areas, and insect and disease chemical applications.
- C. Contractor shall maintain plant material as described in Part 3.6, 90-DAY MAINTENANCE

1.9 GUARANTEE AND REPLACEMENT

- A. Warrant all lawns for a period of one year from date of Notice of Substantial Completion, to be at least the quality and conditions as at Final Acceptance. Promptly re-sod unacceptable areas during the warranty period as directed by the Landscape Architect.
- B. Lawn shall be uniform in color, grass type, leaf texture, leaf and root density, and free from weeds, diseases, and other visible imperfections at acceptance.
- C. Damage to the irrigation system by other trades or persons (such as shutting off of water or power to the irrigation system) shall not affect the warranty. This means that, especially in the warm season, the Contractor shall make daily visits to the site to inspect and repair the irrigation system up until final acceptance.

1.10 FINAL INSPECTION AND ACCEPTANCE

- A. The Landscape Architect will inspect all work for Substantial Completion upon written request of the Contractor. The request shall be received at least ten calendar days before the anticipated date of inspection.
- B. Acceptance will be based on establishment of a uniform stand of turf grass, defined as coverage of specified grass at a density of 95 percent coverage, with no bare spots greater than one square foot, free of weeds, undesirable grass species, disease, and insects. For grass varieties selected, allow a minimum of 90 days for establishment and maintenance of an acceptable strand of grass.
- C. In areas that are grassed and not irrigated. An acceptable strand of grass shall be established and the Landscape Architect will inspect the work for Substantial Completion upon written request of the Contractor.
- D. Upon completion and re-inspection of all repairs or renewals necessary in the judgment of the Landscape Architect, the Landscape Architect will recommend to the Owner that the work of this Section be accepted.

PART 2 - MATERIALS

2.01 SOLID SOD

- A. Sod shall be as specified on plans, nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully and otherwise maintained from planting to harvest. Sod must be mowed two (2) days prior to cutting.

- B. All sod shall be "Certified Sod" from a licensed and certified sod producer. Provide test results from a plant pathology lab to LA for approval before purchase.
- C. For sports fields, or if called out on plans, use only rolled solid sod.
- D. Thickness of Cut: Sod shall be cut to have minimum pad thickness of:
 - 1. Bermuda Grass: 3/4" minimum thickness, with plus/ minus 1/8" tolerance
 - 2. St. Augustine, Buffalo, and Zoysia Grass: 1" thick, with plus/ minus 1/8" tolerance
- E. Width and Length of Sod: Maximum allowable deviation from standard widths and lengths shall be plus or minus 1/2" on width, and plus or minus 5% on length. Broken strips and torn or uneven ends will be rejected.
- F. Strength of Sod Strips: Sod strips shall be strong enough to support their own weight and retain their size and shape if suspended vertically when grasped in the upper 10% of the section.
- G. Moisture Content: Sod shall not be harvested or transplanted when moisture content (excessively wet or dry) may adversely affect its survival.
- H. Sod shall consist of live growing plants secured from sources which have dense, thickly matted root system throughout the soil of the sod for a minimum of one inch. Sod shall be free of weeds or other varieties of grasses.
- I. Reject any Sod whose roots are dried because of sun or wind. The landscape architect has the right to reject any or all of sod due to lack of care, improper cutting, or other agronomic problems.
- J. Time Limitations: Sod shall be harvested, delivered, and transplanted within a 30-hour period unless a suitable preservation method is approved by the Landscape Architect prior to delivery. Sod not transplanted within this period shall be inspected and approved by the Landscape Architect prior to its installation.
- K. Thatch: Sod shall be relatively free of thatch. A maximum on 1/2" (uncompressed) thatch will be permitted.
- L. Sod shall be free of diseases, harmful insects, nematodes, soil borne diseases, Nutsedge, and all other grassy and broadleaf weeds.
- M. Fertilizer for Sod areas: Italpollina 4-4-4 or approved equal. Product shall be an OMRI registered organic fertilizer of a guaranteed analysis, 4-4-4, containing no less than 41% total organic Carbon, 71% organic matter, and 5% humic acid. Contact: Allen Olson (817) 368-8615, allen@gdrsistemas.net

2.02 TOPSOIL

- A. Contractor to utilize boring logs to determine the limits and availability of on-site topsoil information. All existing topsoil stripped for this work and suitable for reuse shall be stored on site as directed by the Landscape Architect. Dispose of all excess topsoil on the site as directed by the Landscape Architect.
- B. Utilize on-site and imported topsoil to provide a minimum six-inch (6") layer of approved soil for sod installation as specified and indicated on the Drawings.

- C. If on-site topsoil is not available, imported topsoil shall be used as indicated on the drawings and as follows:
1. Imported Top Soil shall be natural, loose, fertile, friable, screened agricultural soil, having characteristics of representative productive soils in the vicinity, and obtained from naturally well-drained areas. Imported Soil for sod areas to be: "Enriched Top Soil", by Soil Building Systems, (972) 831-8181, or approved equal, submit a 1-quart package with supplier label attached to sample.
 2. Silt plus clay content of the import soil shall not exceed 20% by weight with a minimum 95% passing the 2.0-millimeter sieve. The sodium absorption ratio (SAR) shall not exceed 6 and the electrical conductivity (ECe) of the saturation extract of this soil shall not exceed 3.0 millimhos per centimeter at 25 degrees centigrade. The boron content shall be no greater than 1 part per million as measured on the saturation extract. In order to ensure conformance, samples of the import soil shall be submitted to the laboratory for analysis prior to, and following, backfilling.
 3. Imported Top Soil shall be free of insects, harmful nematodes, soil-borne diseases, toxins, heavy clay, select fill, inorganic subsoils, heavy metals, trash, petroleum by-products, rocks over 1" diameter, rubble, roots, Nutgrass, or weeds, or weed seeds.
 4. Imported Topsoil shall have a pH between 6.5 - 7.3.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Obtain written certification from the General Contractor that final grades to within 0.10' have been established prior to commencing planting operations. Provide for inclusion of all amendments, settling, etc. The Contractor shall be responsible for shaping all planting areas as indicated on the drawings, or as directed by the Landscape Architect.
- B. Inspect site to ensure that it is ready to be sodded and that irrigation system is working for all areas to receive sod.

3.02 EXCAVATION

- A. In all sod areas, the Contractor shall *thoroughly* remove from the construction site all limestone larger than 1/2" in diameter and all heavy clay to a minimum depth of 6". The LA shall verify that this is complete before the Contractor is authorized to proceed with fill of specified topsoil or grading. Scarify subsoil after removal of rock or heavy clay before adding topsoil so as to break up any surface tension.
- B. The Contractor shall thoroughly remove from the construction site all the following particles that are larger than 1/2" in diameter: inorganic select fill, heavy clay, limestone, and construction debris, mortar, concrete, paint, paint thinner, chemicals, weeds, plastic, paper, steel, wire, mortar, masonry, construction debris, and other substances that are harmful to plant growth. Remove the above items to these depths: 6" minimum in turf and seed areas, and 18" minimum in planting beds. The LA shall verify that the above items are removed before the Contractor is authorized to proceed with fill with specified topsoil or grading. **DO NOT PLACE ANY FILL ON CONSTRUCTION DEBRIS.**
- C. After clean-up described above and establishment of subgrade, drag entire planting area with teeth of bucket to scarify subsoil to a depth of 4" to break up surface tension and allow water to pass downwards through the soil.

- D. If soils are rocky or full of limestone or heavy clay, install irrigation system before adding topsoil so as to keep limestone or clay below imported topsoil and the root zone of plants.
- E. Excavation for planting shall include the stripping and stockpiling of all acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plant pits, and planting beds.
- F. Excess soil generated from the planting holes and not used as backfill or in the establishment of the final grades, shall be removed to an on-site location, as approved by the Owner. Unacceptable excess soil shall be removed to an appropriate off-site location.
- G. Protect all areas from excessive compaction when trucking plants or other material to the planting site. Existing vegetation identified by the Landscape Architect to remain, shall be protected from trucking operations during construction.

3.03 PRE-PLANT WEED CONTROL

- A. After the irrigation system is operational and approved by the Landscape Architect, apply water for seven (7) to ten (10) calendar days, as needed to achieve weed germination.
- B. If live perennial weeds exist on site at the beginning of the work, spray with a non-selective, systemic contact herbicide, as recommended and applied by an approved, licensed landscape pest control applicator. Leave sprayed plants intact for at least fourteen (14) days to allow systemic kill. Reapply at 2-week intervals until a complete kill is achieved.
- C. Clear and remove these existing, dead weeds by mowing or grubbing off all plant parts at least 1" below the surface of the soil over the entire area to be planted.
- D. Maintain the site weed-free until final acceptance by the Landscape Architect, utilizing mechanical and chemical treatment.

3.04 SOIL PREPARATION

- A. Grade Preparation
 - 1. Immediately before sodding, power-rake, scarify, loosen, float and drag the upper 6" of topsoil to bring it to the proper condition. Remove foreign matter larger than 1/2" in diameter. Sod areas shall have topsoil that is smooth and compacted to 85% after preparation.
 - 2. If there is not sufficient existing approved topsoil on site, apply imported topsoil as specified in Section 2.1 G, MATERIALS, to achieve finish grade. If required, import topsoil to achieve depth of (6") of approved topsoil in all turf areas.
 - 3. Fine Grading: After tillage and cleaning, all areas to be planted shall be leveled, fine graded, and drug with a weighted spike harrow or float drag. The required result shall be the elimination of ruts or depressions that would cause water to stand or pond immediately after rainfall or operation of the lawn irrigation system, humps, and objectionable soil clods. This shall be the final soil preparation step to be completed before the commencement of fertilizing and planting.
 - 4. If the prepared grade is eroded or compacted by rainfall prior to fertilizing, rework the surface to specified condition.
 - 5. Sod to be placed after final grade is approved in a timely manner not to exceed a 48-hour period from time of approval to laying of sod.
- B. Spreading of Topsoil:

1. Topsoil and subgrade shall be damp when topsoil is spread. Top of subsoil shall be scarified and loose, not a hardpan before adding topsoil.
2. Areas to be sodded shall be top-soiled to a minimum depth of six in. (6"), compacted measure. Provide additional topsoil depths as required to construct the grades indicated on the Drawings. Topsoil shall be compacted to 85%, determined in accordance with ASTM: D 1557. Onsite topsoil is to be used unless it is not available, or is more than 25% clay, or is more than 10% limestone, or is rocky.

C. Fertilizing for Sod Areas:

1. Till specified fertilizer (along with any amendment) into the top 1" of area to receive sod. Work fertilizer into the soil to a depth of ½"-1" after fine grading & not more than 2 days prior to grass planting. Cultivating equipment shall be set so the fertilizer will not penetrate the soil more than 1 inch. Do not apply fertilizer when there is a possibility of rain before lawn areas can be sodded.
2. Uniformly distribute granular Sod Fertilizer (See Section 2.2 M) by mechanical means at the rate of 1200 lbs. per acre or 28 lbs. per 1000 sq. ft.
3. Irrigate soil after fertilizer application and 1- 4 hours prior to laying sod.

3.05 SODDING

A. Weather Conditions

1. Schedule work for periods of favorable weather.
2. Do not place Sod on days that, in the judgment of the Landscape Architect, are too hot, sunny, dry, cold, wet, or windy for optimal growth.

B. Placement Pattern

1. The first row shall be laid in a straight line with subsequent rows parallel to the first row and tightly abutting each other.
2. Lateral joints shall be staggered. Care shall be exercised to ensure that the sod is neither stretched nor overlapped. Joints must be butted tightly to prevent voids that could permit air to dry out roots.
3. Immediately after placing, sod shall be pressed firmly into contact with sod bed by tamping or rolling to eliminate air pockets.
4. When on slopes steeper than 4 to 1, sod shall be secured by galvanized pins, wood pegs or other methods approved by the Landscape Architect.
5. Sand joints and top dress turf with topdressing sand as necessary to provide a smooth uniform finished surface.
6. Immediately after sodding operations have been completed, entire surface shall be compacted with a roller or other approved equipment. The completed area after sodding shall be uniformly even, firm, and true to finished grade lines.

C. Rolled Sod

1. For sports fields, or if called out on plans, use rolled solid sod.
2. Runs of rolled sod shall be maximized to minimize small pieces. Lay sod to avoid small or skinny pieces.
3. A bobcat and/or tractor with extra-wide tires and a "big roll" attachment shall be used to lay the rolls of sod.
4. Plastic netting shall be removed as sod is rolled out and properly disposed of upon installation as shown in the following photo:



- D. Watering:
 - 1. Provide an adequate supply of water to keep the sod thriving at the site prior to and during transplanting of the sod.

3.06 CLEAN-UP

- A. After all planting operations have been completed, remove all trash, excess soil, empty plant containers, pallets, ties, rubbish, and all debris associated with this contract from the site. All scars, ruts, trench settlement, or other marks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site. The Contractor shall pick up all trash resulting from this work no less frequently than each Friday before leaving the site, once a week, or the last working day of each week. All trash shall be removed completely from the site.
- B. The Contractor shall leave the site area broom-clean and shall wash down all paved areas within the Contract area, leaving the premises in a clean condition. All walks shall be left in a clean and safe condition.
- C. Excess topsoil not required for lawns or planting shall be stockpiled on site for future use as directed by the Owner's representative.
- D. Repair existing lawns damaged by operations under the contract. Repair shall include finish grading and sodding as required to match existing grade and lawn, and maintenance of repaired areas.

3.07 OBSERVATION SCHEDULE

- A. The Contractor shall be responsible for notifying the Landscape Architect in advance for the following site visits, according to the time indicated:
 - 1. Pre-job Conference - 7 days
 - 2. Final grade review - 2 days
 - 3. Sod material review - 2 days
 - 4. Soil Preparation and planting operations - 2 days
 - 5. Pre-maintenance - 7 days
 - 6. Final inspection - 7 days
- B. When observations are conducted by someone other than the Landscape Architect, the Contractor shall show evidence, in writing, of when and by whom these observations were made.

- C. NO site visits shall commence without all items noted in previous Observation Reports either completed or remedied unless such compliance has been waived by the Owner. Failure to accomplish punch list tasks or prepare adequately for desired inspections shall make the Contractor responsible for reimbursing the Landscape Architect at his current billing rates per hour, portal to portal (plus transportation costs) for the inconvenience. NO further inspections shall be scheduled until this charge has been paid and received.

3.08 GUARANTEE

- A. All plant material shall be guaranteed by the contractor for a period of one (1) year from the date of final acceptance.
- B. At the end of the guarantee period the Landscape Architect and Contractor shall inspect plant material. Any plant material under this contract that is dead or of an unsatisfactory growth condition shall be removed and replaced in a timely fashion by the contractor, at no cost to the owner.

3.09 ACCEPTANCE OF WORK

- A. The contractor and Landscape Architect shall conduct an on-site inspection of all work and materials to determine compliance of work with the construction documents.
- B. The contractor shall, within reasonable means, provide the Landscape Architect with sufficient data to demonstrate compliance with the construction documents.
- C. The contractor shall be notified in writing of any non-conforming items, which are to be corrected (punch-list).
- D. The contractor and Landscape Architect shall conduct an on-site inspection to verify completeness of punch list items.
- E. Acceptance of work by the Owner shall begin upon verifying completion of punch list items and receipt of all deliverable items to Owner including letter of guarantee; release of liens waiver, record drawings denoting deviations from contract drawings, product data and maintenance guide.
- F. The contractor shall receive written notification of date of final acceptance and ending date of required guarantee periods from the Landscape Architect.

3.10 90 DAY MAINTENANCE

- A. The maintenance period shall commence when the Notice of Substantial Completion is issued and shall continue as required for a period of 90 days.
- B. Immediately after sodding, the area shall be protected against traffic or other use by erecting barricades as needed, and by placing approved warning signs at appropriate intervals.
- C. Contractor shall touch-up sod areas as required to achieve 100% coverage at no cost to Owner.
- D. Mow turf grasses only (not wildflower or native grass areas) during establishment only for the purpose of weed control and to promote quicker spreading.
 - 1. Mow Bermuda and Zoysia Grass to a 2" height.

2. Mow St Augustine Grass to a 4" height.
 3. Mow at least once a week in the growing season once turf is rooted and growing.
- E. Fill any depressions, settlement, or washouts that occurs within 90 days following installation. Re-sod bare spots that occur during the maintenance period as directed by the Landscape Architect at no cost to Owner.
- F. Keep lawns clean and protected from damage during the maintenance period. Debris that accumulates shall be removed from the site. Promptly repair damaged lawns except as provided in Section 1.9, GUARANTEE AND REPLACEMENT.
- G. Irrigate as required to supplement natural rainfall so that all lawn areas receive sufficient water for normal plant growth. Furnish all irrigation equipment needed for watering and be responsible for securing adequate supply of water if an automatic irrigation system does not exist, is not operating or is damaged.
- H. A second fertilizer application shall be made 60 days after installation to turfgrasses. The specified fertilizer (see section 2.1.L) shall be applied at 800 pounds per acre or 18 lbs. per 1,000 SF.

END OF SECTION

SECTION 32 93 00

TREES, SHRUBS, AND GROUNDCOVERS

PART 1 - GENERAL

1.01 GENERAL CONDITIONS

The requirements of the "General Conditions of the Contract" shall apply to all work of this Section with the same force and effect as though repeated in full herein.

1.02 SCOPE OF WORK

- A. Furnish all labor, material, equipment, and services necessary to provide all landscape planting, complete in place, as shown on the drawings and as specified.
- B. Work specified in this Section: The work includes, but is not necessarily limited to:
 - 1. Soil preparation
 - 2. Fine grading
 - 3. Metal edging
 - 4. Planting
 - 5. Staking and Guying
 - 6. Clean-up
 - 7. Maintenance
- C. Related work in other Sections:
 - 1. 32 92 23 SOD
 - 2. 32 84 00 PLANTING IRRIGATION
- D. Definition: The term "Landscape Architect" or "LA" shall refer to Teague Nall and Perkins, Inc. 5237 N. Riverside Drive, Suite 100, Fort Worth, Texas 76137.

1.03 SUBMITTALS

- A. Samples and Product Information: Representative samples or product information of the following materials shall be provided to the Landscape Architect from the supply source that is to be used for Trees, Shrubs, and Groundcover areas: Plant type and nursery with clear pictures showing a measuring rod and person for scale.
- B. Samples and product information: one-quart size sample in a quart-size baggie, list of ingredients, guaranteed chemical analysis, and manufacturer for:
 - 1. Topsoil
 - 2. Soil Amendments and Compost
 - 3. Fertilizer
 - 4. Weed Barrier for DG (cut-sheet only)
 - 5. Decomposed Granite
 - 6. Mulch
 - 7. Trip/ Delivery tickets on all above items to verify delivery date, source, type, and quantity
- C. Construction Schedule: At least two weeks prior to start of work, submit planting schedule.

- D. Maintenance: Submit three copies of typewritten instructions recommending procedures to be established by the Owner for the maintenance of the landscape for an entire year. Submit prior to Notice of Substantial Completion.
- E. Chemicals: Submit products, rates of application, and anticipated uses of any pesticides, herbicides, and fumigants.

1.04 QUALITY ASSURANCE

- A. Qualifications
 - 1. The Contractor shall be a company specializing in landscape installation.
 - 2. The Contractor shall have successfully completed at least 5 installations of this type, size, and complexity in the last four years.
- B. All materials and work shall comply with applicable sections of the following references:
 - 1. American Association of Nurserymen, Inc., (AAN) Standard: American Standard for Nursery Stock (ANSI Z60.1, Most recent addition).
 - 2. ANSI A 300 – Standard Practices for Tree, Shrub and other Woody Plant Maintenance, most current edition and parts.
 - 3. Florida Grades and Standards for Nursery Stock, current edition (Florida Department of Agriculture, Tallahassee FL).
 - 4. Interpretation of plant names and descriptions shall reference the following documents. Where the names or plant descriptions disagree between the several documents, the most current document shall prevail.
 - a. USDA - The Germplasm Resources Information Network (GRIN)
<http://www.ars-grin.gov/npgs/searchgrin.html>
 - b. Manual of Woody Landscape Plants; Michael Dirr; Stipes Publishing, Champaign, Illinois; Most Current Edition.
 - 5. Pruning practices shall conform to recommendations "Structural Pruning: A Guide For The Green Industry" most current edition; published by Urban Tree Foundation, Visalia, California.
 - 6. Glossary of Arboricultural Terms, International Society of Arboriculture, Champaign IL, most current edition.
 - 7. Fertilizers; Mixed Commercial. Federal Specification: 0-F-241D
- C. Source Quality Control:
 - 1. Submit documentation to the Landscape Architect within ten (10) calendar days after award of the Contract that all plant material is available. The Contractor shall be responsible for all material listed on the plant list. Any substitutions due to unavailability must be requested, in writing, prior to confirmation of ordering. All material shall be subject to inspection by the Landscape Architect at any time after confirmation of ordering.
 - 2. Plants shall be subject to inspection and approval of the Landscape Architect at the place of growth, or upon delivery for conformity to the specifications. Such approval shall not impair the right of inspection and/ or rejection during the progress of the work. Inspection and tagging of plant material by the Landscape Architect is for design intent only and does not constitute the Landscape Architect's approval of the plant materials in regard to their health and vigor as specified in Part 2, Section 2.1, H., Plant Material.
 - 3. The health and vigor of the plant material is the sole responsibility of the Contractor. Submit written request for inspection of plant material at the place of growth to the Landscape Architect. Written requests shall state the place of

growth and quantity of plants to be inspected. The Landscape Architect reserves the right to refuse inspection at this time if, in his judgment, a sufficient quantity of plants is not available for inspection.

4. The Contractor shall submit specifications of any item being used on site, upon the request of the Landscape Architect.
5. The Contractor shall obtain and pay for all permits required by local codes.
6. Ordinances and Regulations: All local, municipal, and state laws, and rules and regulations governing or relating to any portion of this work are hereby incorporated into and make a part of these specifications, and their provisions shall be carried out by the Contractor. Anything contained in these specifications shall not be construed to conflict with any of the above rules and regulations, or requirements of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of these specifications and drawings shall take precedence.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery:

1. Deliver fertilizer to the site in the original, unopened containers bearing the manufacturer's guaranteed chemical analysis, name, trade mark, and conformance to State law.
2. The Contractor shall furnish the Landscape Architect with copies of receipts for all amendments specified in Section 2.1, Materials, or amended by the Soils Report specified in Section 3.2, Preparation.
3. Deliver all plants with legible identification labels.
 - a. Label trees, bundles of containers of like shrubs, or groundcover plants.
 - b. State the correct botanical plant name and size indicated on the plant list, on the drawings.
 - c. Use durable waterproof labels with water-resistant ink which will remain legible for at least 60 calendar days.
4. Protect plant material during delivery to prevent damage to the root ball or desiccation of leaves.
5. Tarp trees and plant material with canvas, or similar material, during delivery of any length, on any open-air transport.
6. Transporting trees in excess of 20 miles from the site shall be done during evening, night, early morning hours during summer months. The Contractor shall routinely stop the transport and water root balls at pre-determined intervals. Intervals shall be in agreement with the Landscape Architect, as determined in advance of the transport.
7. The Contractor shall notify the Landscape Architect seven (7) calendar days in advance of delivery of all plant materials and shall submit an itemized list of the plants in each delivery.

B. Storage:

1. An on-site location shall be made available for plant material storage. Security and protection of the storage area shall be the Contractor's responsibility.
2. Store plant material in shade and protect from weather.
3. Maintain and protect plant material not to be planted within four (4) hours in a healthy, vigorous condition.
4. Storage of plant materials shall be neat, orderly, and grouped according to like plants.

5. Plant material, upon delivery, shall be inspected for transport damage, disease, and insect infestation. Any infected material shall be immediately removed from site at Contractor's expense. Notify Landscape Architect in writing upon discovery of any pests.
 6. The Contractor shall be responsible for completely restoring the storage area to the original condition prior to final acceptance of construction. Restoration shall occur within seven (7) calendar days of written notification by the Landscape Architect.
- C. Handling: The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of plant materials. Plant materials that have been damaged in any way will be discarded, and if installed, shall be replaced with undamaged materials at the Contractor's expense.

1.06 JOB CONDITIONS

- A. Perform actual planting only when weather and soil conditions are suitable in accordance with locally accepted practice.
- B. Scheduling: Install trees, shrubs, and groundcover before hydraulic seeding or sodding operations are commenced.

1.07 SAMPLES AND TESTS

- A. The Landscape Architect reserves the right to take and analyze samples of materials for conformity to specifications at any time. The Contractor shall furnish samples upon request by the Landscape Architect. Rejected materials shall be immediately removed from the site at the Contractor's expense. Cost of the testing of materials not meeting specifications shall be paid by the Contractor.
- B. After rough grading is complete, Contractor shall order and pay for a soil test which includes recommendations. Take a minimum of one soil test per 10 acres - or more as site conditions mandate. Take approximately 15 cores from each uniform soil area. Mix them thoroughly in a clean plastic or paper container. Fill the soil sample bag one-third to one-half full from this representative sample. Acceptable labs are:
 1. TPS Lab: "SO-05, TPSL® Plant Natural™ Soil Test + LOI Organic Matter + Solvita®"
 2. A&L Plains Agricultural Laboratories: "Basic Test S2" and "Basic Test S3" and "Organic Matter – by Combustion" (all three tests are required)
- C. Submit results to Landscape Architect for adjustment to soil amendments and fertilizers.

1.08 MAINTENANCE

- A. All stored plant material shall be maintained in a healthy, vigorous condition by the Contractor. Maintenance includes, but is not necessarily limited to, mowing, weeding, edging, watering, trash removal, street and gutter cleaning, erosion repair, removal of siltation in drainage areas, and insect and disease chemical applications. The storage area shall be mowed, weeded, and trimmed weekly during construction and the life of the storage area.
- B. Within the limits of construction, the site shall be maintained in a neat, well-kept appearance by the Contractor. Maintenance includes, but is not necessarily limited to, mowing, weeding, edging, watering, trash removal, street and gutter cleaning, erosion

repair, removal of siltation in drainage areas, and insect and disease chemical applications.

- C. Contractor shall maintain plant material as per section 3.7, 90 DAY MAINTENANCE.

1.09 GUARANTEE AND REPLACEMENT

- A. All materials (living and non-living) and workmanship shall be guaranteed for a period of one year after the Date of Acceptance by the Owner. When the work is accepted in parts, the guarantee periods shall extend from each of the partial acceptances to the terminal date of the last guarantee period. Thus, all guarantee periods terminate at one time.
- B. Plants shall be healthy, free of pests and disease, and in flourishing condition at the end of the guarantee period. Plants shall be free of dead and dying branches and branch tips, and shall bear foliage of normal density, size, and color.
- C. Contractor shall promptly replace all dead plants and all plants not in a vigorous, thriving condition, as determined by the Landscape Architect during and at the end of the guarantee period, without cost to the Owner, as soon as weather conditions permit and within the specified planting period. Replacements shall match adjacent specimens of the same species. Replacements shall be subject to all the requirements stated in this Specification. Contractor to make all necessary repairs due to plant replacements. Such repairs shall be done at no cost to the Owner.
- D. The guarantee of all replacement plants shall extend for an additional one-year period from the date of their acceptance after replacement. If a replacement plant is not acceptable during or at the end of the said extended guarantee period, the Owner may elect one more replacement or credit for each item.
- E. Damage to the irrigation system by other trades or persons (such as shutting off of water or power to the irrigation system) shall not affect the warranty. This means that, especially in the warm season, the Contractor shall make daily visits to the site to inspect and repair the irrigation system up until final acceptance.
- F. Scheduling of replacements within a reasonable time shall be as determined by the Owner. In the event of failure to make such repairs or replacements within a reasonable time after receipt of written notice from the Owner, the Contractor authorizes the Owner to proceed to have said repairs or replacements made at Contractor's expense and Contractor agrees to reimburse Owner within 60 days.

1.10 FINAL INSPECTION AND ACCEPTANCE

- A. At the end of the guarantee period, the Landscape Architect will, upon written notice of end of guarantee period inspect the work for Final Acceptance. Request shall be received at least ten calendar days before the anticipated date for Final Inspection.
- B. Upon completion and reinspection of full repairs or replacements necessary in the judgment of the Landscape Architect at that time, the Landscape Architect will recommend to the Owner that Final Acceptance of the Work of the Section be given.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. The following specified soil amendments and fertilizer are to be used for bid prices basis only. Specific amendments and fertilizer specification will be made after rough grading operations are complete and soil samples are tested by the Laboratory at the Contractor's expense.
- B. All materials shall be of standard, approved, and first-grade quality and shall be in prime condition when installed and accepted. Any commercially processed or packaged material shall be delivered to the site in the original, unopened container bearing the manufacturer's guaranteed analysis. The Contractor shall supply the Landscape Architect with a sample of all supplied materials accompanied by analytical compliance or bearing the manufacturer's guaranteed analysis.
- C. Soil Amendment for shrub and groundcover beds and stand-alone tree planting: "Gumbo Buster", by Soil Building Systems, 972-831-8181, or approved equal. See Submittals Section 1.3 B.
- D. Fertilizer for Tree, Shrub, and Groundcover Areas: Italtollina 4-4-4 or approved equal. Product shall be an OMRI registered organic fertilizer of a guaranteed analysis, 4-4-4, containing no less than 41% total organic Carbon, 71% organic matter, and 5% humic acid. Contact: Allen Olson (817) 368-8615, allen@gdrsystems.net.
- E. Imported Topsoil shall:
1. Be loose, fertile, friable, screened horticultural soil, having characteristics of representative productive soils in the vicinity, and obtained from naturally well-drained areas. Imported Topsoil for planting beds to be: "Ready-to-Plant", by Soil Building Systems, (972) 831-8181, or approved equal. See Section 1.3 B.
 2. Include fully composted cotton burrs, local grass, leaves, brush and processed wood fiber and shall add an average of 1.44 lbs. of N, 0.22 lbs. P, and 0.9 lbs. K of pure consumable organic nutrients per 100 square feet for each inch depth added plus minerals and trace elements. Compost shall not include food waste, stable waste, treated lumber, pallets, pine bark, raw manure or mushroom compost waste. Compost shall not include any man-made materials or chemicals. Do not use mixed municipal solid waste compost. Ensure compost does not contain any visible inorganic refuse, other physical contaminants, or any substance considered harmful to plant growth. It must be turned at least 5 times and not exceed a temperature of 160 degrees Fahrenheit. Each turning cycle should not be shorter than 14 days minimum. Supporting compost process documentation should be made available by compost vendor upon request.
 3. Be comprised of pH Balanced Compost, select screened soil, and screened non-washed sand.
 4. Have 98.5% of media passing through a ½ screen and 99%+ passing through a ¾ inch screen. The Imported Topsoil will weigh between 1,900 and 2,250 lbs. per cubic yard.
 5. Not contain, or be created from, treated lumber, pallets, construction waste, pine bark, straw, raw mulch, raw manure, livestock stable bedding litter/waste, food waste, or mushroom compost waste.
 6. Be free of insects, harmful nematodes, soil-borne diseases, toxins, heavy clay, select fill, inorganic subsoils, heavy metals, trash, petroleum by-products, rocks over 1" diameter, rubble, roots, weeds, weed seeds, Clopyralid, or Picloram.
 7. Have a pH between 6.0 and 7.0.
 8. Silt plus clay content of the import soil shall not exceed 20% by weight with a minimum 95% passing the 2.0-millimeter sieve. The sodium absorption ratio (SAR) shall not exceed 6 and the electrical conductivity (ECe) of the saturation

extract of this soil shall not exceed 3.0 millimhos per centimeter at 25 degrees centigrade. The boron content shall be no greater than 1 part per million as measured on the saturation extract. In order to ensure conformance, samples of the import soil shall be submitted to the laboratory for analysis prior to, and following, backfilling.

F. Plant Material:

1. Name and Variety: Provide plant materials true to name and variety described in Quality Assurance Section 1.4 B.
2. Plants shall be in accordance with the Texas State Department of Agriculture's Regulation for nursery inspections, rules, and ratings.
3. All plant material shall be No. 1 grade nursery stock or better, grown in accordance with good horticultural practice. Plants shall be free of disease, insects, eggs, larvae, and defects such as knots, sunscald, injuries, abrasions, or disfigurement. They shall be sound, healthy and vigorous, of uniform growth, typical of the species and variety, well formed, free from irregularities, with the minimum quality conforming to American Standard for Nursery Stock.
4. Plants indicated as specimen shall be exceptionally heavy, symmetrical, and tightly knit, cultured, to be unquestionably superior in form, branching, compactness, and symmetry.
5. The minimum acceptable sizes of all plants shall be measured before pruning and with branches in normal position. Unless otherwise designated on the plant list, all plant dimensions shall conform to those listed in ANSI Z60.1, American Standard for Nursery Stock.
6. Branching point is the distance above ground where balanced branching occurs or where a dimension in trunk appears to form the head of the tree.
7. Trees shall not have included bark in the crotches of the limbs. Trees with included bark shall be rejected.
8. Root Treatment: Root treatments on all plants shall conform to the requirements of ANSI Z60.1. Plants shall be dug and prepared for shipment in a manner that will not cause damage to branches, shape, and future development after planting.
9. Plants furnished in containers shall have the roots well established in the soil mass and shall have growth in the container for at least one growing season. Containers shall be large enough to provide earth root mass of adequate size to support the plant tops being grown.
10. Container-grown trees shall have a root ball measuring 10" of diameter for each 1" of tree caliper. The tree caliper shall be measured on the trunk, 12" above the finish grade or root flare of the tree. Plants, other than ground covers, over established in the container, as evidenced by pot bound root ends, will not be accepted.
11. B&B and Collected Plant Material (only permitted if specifically called out on plans) shall have a root ball measuring 12" of diameter for each 1" of tree caliper. The tree caliper shall be measured on the trunk, 12" above the finish grade or root flare of the tree.
12. If plants are specified as balled and burlapped (B&B), then B&B plants shall have a firm, natural ball of earth of sufficient diameter and depth to encompass the fibrous and feeding root systems necessary for full recovery of the plant. Balls shall be securely wrapped with burlap and bound with cord or a wire basket. Ball sizes shall meet the requirements of the ANSI Z60.1, or as indicated on the Drawings. B&B trees shall have been hardened off, meaning that they shall have been dug 6-52 weeks prior to shipment.

13. Provide healthy stock, grown in a nursery and reasonably free of die-back, disease, insects, eggs, bores, and larvae. At the time of planting all plants shall have a root system, stem, and branch form that will not restrict normal growth, stability and health for the expected life of the plant.
14. Plant materials are subject to final approval by the Landscape Architect at the job site.
15. All plants not conforming to the requirements herein specified, shall be considered defective and such plants, whether in place or not, shall be marked as rejected and immediately removed from the site of the work and replaced with new plants at the Contractor's expense. The plants shall be of the species, variety, size, and conditions specified herein or as shown on the drawings. Under no conditions will there be any substitutions of plants or sizes listed on the accompanying plans, except with the expressed, written consent of the Landscape Architect.

G. Plant Root Quality

1. Plant roots shall be normal to the plant type specified. Root observations shall take place without impacting tree health. Root quality at or below the soil line shall comply with the project Root Acceptance details and the following:
 - a. The roots shall be reasonably free of scrapes, broken or split wood.
 - b. The root system shall be reasonably free of injury from biotic (e.g., insects and pathogens) and abiotic (e.g., herbicide toxicity and salt injury) agents. Wounds resulting from root pruning used to produce a high quality root system are not considered injuries.
2. A minimum of three structural roots reasonably distributed around the trunk (not clustered on one side) shall be found in each plant. Root distribution shall be uniform throughout the root ball, and growth shall be appropriate for the species. Plants with structural roots on only one side of the trunk (J roots) shall be rejected.
3. The root collar shall be within the upper 2 inches of the substrate/soil. Two structural roots shall reach the side of the root ball near the top surface of the root ball. The grower may request a modification to this requirement for species with roots that rapidly descend, provided that the grower removes all stem girdling roots above the structural roots across the top of the root ball.
4. The root system shall be reasonably free of stem girdling roots over the root collar or kinked roots from nursery production practices.
5. At time of observations and delivery, the root ball shall be moist throughout. Roots shall not show signs of excess soil moisture conditions as indicated by stunted, discolored, distorted, or dead roots.

H. Staking Materials:

1. Tree support stakes shall be Tree Frog Pro Series above ground guying system or approved equal. (352) 735-7411. Install according to manufacturer's instructions.
2. Size according to:
 - a. Pro 20 – up to 2" caliper trees
 - b. Pro 40 – up to 4" caliper trees
 - c. Pro 60 – up to 6" caliper trees
3. Straps to be 3/4" wide, woven, green polypropylene, 900 lb. break strength, UV resistant strapping, provided by manufacturer.
4. Anchors to be arrowhead-shaped aluminum alloy (HD).

- I. Tree Paint (for Oaks only to prevent spread of Oak Wilt): Tanglefoot Tree Wound Pruning Sealer (emulsified asphalt) or approved equal.
- J. Weed Barrier: Do not use weed barrier in planting beds. Weed Barrier product for DG or gravel or stone areas shall be "Weed Barrier Pro" as supplied by DeWitt Company 1-800-888-9669 or approved equal.
- K. Water: Source furnished by the Contractor, cost and transport of water, as required, by the Contractor.
- L. Mulch: "Fine Cut Hardwood Mulch" by Soil Building Systems, or approved equal - submit sample.
- M. Drainage Sand: course, clean, sharp, washed river sand, with no debris.
- N. Metal Edging: Shall be Permaloc 3/16-inch thick x 4-inch high, extruded aluminum, 6063 alloy, T-6 hardness, landscape edging for straight-line and curvilinear applications in corrugated straight profile, as manufactured by Permaloc Corporation, Holland MI 49424, telephone (800) 356-9660 or approved equal. Each section shall have loops on its side to receive stakes spaced approximately 2 to 3 feet apart along its length. Steel edging is not acceptable.
 - 1. For straight runs: [Permastrip](#) "L" shape, (Ref #: 006-045)
 - 2. For curved runs: [Cleanline](#), (Ref #: 006-0165)
 - 3. Finish: Black Duraflex
 - 4. Stakes: 12" long, color matched to edging
 - 5. Length: 16'-20' long interlocking pieces

PART 3 - EXECUTION

3.01 INSPECTION

- A. Obtain written certification from the General Contractor that final grades to within 0.10' have been established prior to commencing planting operations. Provide for inclusion of all amendments, settling, etc. The Contractor shall be responsible for shaping all planting areas as indicated on the drawings, or as directed by the Landscape Architect.
- B. Inspect trees, shrubs, and groundcover plant material for injury, insect infestation, and trees and shrubs for improper pruning.
- C. Do not begin planting of plants until deficiencies are corrected.

3.02 EXCAVATION

- A. In all planting beds, the Contractor shall *thoroughly* remove from the construction site all limestone larger than 3/4" in diameter and all heavy clay to a minimum depth of 18". Use a power rake to remove rocks from sites with more than 1 rock per SY. The LA shall verify that this is complete before the Contractor is authorized to proceed with fill of specified topsoil or grading. Scarify subsoil after removal of rock or heavy clay before adding topsoil to break up any surface tension.
- B. The Contractor shall thoroughly remove from the construction site all the following particles that are larger than 3/4" in diameter: inorganic select fill, heavy clay, limestone, and construction debris, mortar, concrete, paint, paint thinner, chemicals, weeds, plastic, paper, steel, wire, mortar, masonry, construction debris, and other substances that are

harmful to plant growth. Remove the above items to these depths: 6" minimum in turf and seed areas, and 18" minimum in planting beds. The LA shall verify that the above items are removed before the Contractor is authorized to proceed with fill with specified topsoil or grading. DO NOT PLACE ANY FILL ON CONSTRUCTION DEBRIS.

- C. After clean-up described above and establishment of subgrade, drag entire planting area with teeth of bucket to scarify subsoil to a depth of 4" to break up surface tension and allow water to pass downwards through the soil.
- D. Excavate planting beds so that the rough grade is 8"-9" below top of adjacent pavement or curbs to allow for addition of compost, planting soil, and mulch.
- E. If soils are rocky or full of limestone or heavy clay, install irrigation system before adding topsoil to keep limestone or clay below imported topsoil and the root zone of plants.
- F. Excavation for planting shall include the stripping and stockpiling of all acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plant pits, and planting beds.
- G. Excess soil generated from the planting holes and not used as backfill or in the establishment of the final grades, shall be removed to an on-site location, as approved by the Owner. Unacceptable excess soil shall be removed to an appropriate off-site location.
- H. Protect all areas from excessive compaction when trucking plants or other material to the planting site. Existing vegetation identified by the Landscape Architect to remain, shall be protected from trucking operations during construction.

3.03 PRE-PLANT WEED CONTROL

- A. After the irrigation system is operational and approved by the Landscape Architect, apply water for seven (7) to ten (10) calendar days, as needed to achieve weed germination.
- B. If live perennial weeds exist on site at the beginning of the work, spray with a non-selective, systemic contact herbicide, as recommended and applied by an approved, licensed landscape pest control applicator. Leave sprayed plants intact for at least fourteen (14) days to allow systemic kill. Re-apply at 2-week intervals until a complete kill is achieved.
- C. Clear and remove these existing, dead weeds by mowing or grubbing off all plant parts at least 1" below the surface of the soil over the entire area to be planted.
- D. Maintain the site weed-free until final acceptance by the Landscape Architect, utilizing mechanical and chemical treatment.

3.04 SOIL PREPARATION

- A. Topsoil: If there is not enough existing approved topsoil on site, apply imported topsoil as specified in Section 2.01 G, MATERIALS, to achieve finish grade. If required import topsoil to achieve depth of 24" of approved topsoil in planting beds and tree pits.
- B. Amendments: After finished grades have been established, soil shall be conditioned in the following manner:
 - 1. For stand-alone tree pits: (1) part soil amendment to (2) parts native or imported topsoil.

2. For planting beds:
 - a. After rough grade is established, thoroughly till 2" of Gumbo Buster 2" into existing soil until there is a 4" soil layer that is evenly mixed, loose, and friable.
 - b. Add a full 6" of "Ready-to-Plant" soil mix on top of soil mix.
- C. Fertilization:
 1. Trees: Fertilize tree pits at time of planting. Apply specified fertilizer (see Section 2.1.E) into tree pits at the rate of 1/4 cup per caliper inch to backfill around the root ball. Apply the fertilizer in the presence of the landscape architect. Failure to apply the fertilizer in the presence of the Landscape Architect will result in the Contractor's responsibility to apply a second fertilization, at a time determined by the Landscape Architect, at no additional cost to the Owner. See Section 2.01 E, MATERIALS.
 2. Shrubs, groundcover, and seasonal color areas: Till fertilizer into the top 6" of the planting bed at the rate of 20 lbs. per 1000 SF. Irrigate immediately following the application. See Section 2.01 E, MATERIALS
- D. Fine Grading: Contractor shall fine grade all areas for approval by LA. Contractor shall be responsible for providing 2% positive drainage in all planting areas. No planting or mulching will take place until all construction, clean-up, fine grading, and irrigation is complete in the immediate area. Final finish grading shall be reviewed by the LA before any planting takes place. Contractor shall be responsible for any additional topsoil required to create a smooth condition prior to planting.
- E. All planting areas shall drain away from buildings by at least 2%.

3.05 PLANT INSTALLATION

- A. General:
 1. Actual planting shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted practice, as approved by the Landscape Architect. Do not plant when raining or into waterlogged or frozen soil.
 2. Only as many plants as can be planted, staked, and watered on that same day shall be distributed in a planting area.
 3. Containers shall be opened and plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken and they shall be planted and watered as herein specified immediately after removal from the containers. Containers shall not be opened prior to placing the plants in the planting area.
- B. Lay-Out of Trees: Locations for Trees and bedlines shall be marked on the ground by the Contractor before any tree pits are dug. All such locations shall be approved by the Landscape Architect.
 1. If underground construction or utility lines are encountered in the excavation of planting areas, other locations for planting may be selected by the Landscape Architect. It shall be the Contractor's responsibility to confirm with the Owner, Landscape Architect, and all governing agencies, the location and depth of all underground utilities and obstructions.
 2. Lay-out shall be accomplished with flagged grade stakes indicating tree names and specified plant size on each stake.

- C. Container Removal: Cut the container on the sides with an acceptable can cutter. Do not injure the root ball. After removing the plant from the container, superficially cut the edges of roots with a sharp knife in three (3) equally spaced locations.
- D. Ball & Burlap Removal: Cut off the top 6" of the wire basket. All wire on the root ball with less than a 4" x 4" grid pattern shall be removed entirely and disposed of at an off-site location. Remove all burlap, rope, twine, and wire from around the plant trunk. Lay any burlap back approximately 12", exposing a minimum of the top one-third (1/3) of the root ball. All material or fabric used as a substitution for burlap and is not equal to the degradable qualities of burlap, shall be removed entirely from the root ball and disposed of at an off-site location.
- E. Box Container Removal: Remove the bottom of the plant boxes before planting. Place the plant in the pit, position, and backfill to a minimum of one-third the depth of the root ball. Remove the sides of the boxes without damaging the root ball.
- F. Planting of Trees and Shrubs:
1. Planting pits shall be round and sized in accordance with outlines and dimensions shown on the drawings.
 2. All excavated tree holes shall have sloped sides (see detail) with roughened surfaces and shall be of a size that is two (2x) times the diameter of the root ball for all trees. The depths of all excavated holes shall have a roughened pit bottom and shall be of a depth equal to the depth of the root ball or roots for all trees and shrubs.
 3. If rotating augers or other mechanical diggers are Used to excavate holes, the vertical sides of the pits shall be scarified, fractured, or otherwise broken down to eliminate impervious surfaces.
 4. Loosen or scarify the bottom of all plant pits to a depth of 4 inches.
 5. SCARIFY ALL ROOTBALLS (#1 and larger) to prevent plants from remaining pot-bound. This is to be done by hand or with a 3-prong cultivator but never with a shovel or machete.
 6. Center the plant in the pit or trench.
 7. Place shrubs and groundcovers so that the top of the rootball is 1/4" to 3/4" above finish grade. Trees shall be set 1" above finish grade for each caliper inch of trunk. Example: A 3" tree shall be set 3" above finish grade. DO NOT, UNDER ANY CIRCUMSTANCE, PLANT TREES, SHRUBS OR GROUNDCOVER BELOW FINISH GRADE. DO NOT PLACE ANY SOIL ON TOP OF ROOTBALLS.
 8. Set the plant plumb and hold rigidly in position until the soil has been tamped firmly around the root ball or roots.
 9. After the plant has been placed, backfill shall be added to the hole to cover approximately one-half (1/2) the height of the root ball. At this stage, water shall be added to the top of the partly filled hole to thoroughly saturate the root ball and adjacent soil. WATER IN AND COMPACT PLANTING BACKFILL TO PREVENT FORMATION OF AIR POCKETS.
 10. Backfill the remainder of the hole after the water has percolated and is not standing in the hole. Construct a three-inch (3") water saucer around the edge of the hole. The planting shall be immediately irrigated after planting until the entire area is saturated to the full depth of each hole.
- G. Staking and Guying:

1. Each tree shall be staked into undisturbed soil immediately following planting. Plants shall stand plumb after staking. See detail for staking guidelines. All stakes and guys shall be installed taught, equally spaced, and beyond the root ball. Refer to the detail on drawings.
- H. Pruning:
1. Pruning shall be limited to the minimum necessary to remove injured twigs and branches. All limbs growing in a conflicting, crossing fashion with one another shall be pruned. Pruning may NOT be done prior to the delivery and acceptance of the plant material. PRUNING SHALL BE DONE ONLY IN THE PRESENCE OF THE LANDSCAPE ARCHITECT.
 2. Do not use pruning paint except for Oak Trees. For Oaks, follow best practices by TexasOakWilt.org
 - a. Clean all pruning tools with 10% bleach solution or Lysol between sites and/or trees.
 - b. If possible, avoid pruning Oaks from Feb 1 - June 30.
- I. Planting of Groundcovers and Seasonal Color:
1. Plants shall be grown in pots as indicated on the drawings. Plants shall remain in those pots until the time of transplanting into the designated areas. The pot's soil shall contain enough moisture so that it will not fall apart when lifting the plants from the pot.
 2. Groundcover and seasonal color shall be planted in straight rows, evenly spaced, and at spacing called out on the drawings, unless otherwise noted on the drawings. Triangular spacing shall be used unless otherwise noted on the drawings.
 3. Each rooted plant shall be planted with its proportionate amount of soil. Planting shall be immediately irrigated after planting until the entire area is saturated to the full depth of each hole.
 4. Care shall always be exercised to protect the plants after installation. Any damage to the plants by trampling or other operations of this Contract shall be repaired immediately.
 5. Seasonal color material and placement will be selected by the Landscape Architect at the time of installation.
 6. The Owner and Landscape Architect reserves the right to review and approve all plant material at the nursery or grower.
- J. Mulch Cover:
1. All trees, shrubs, groundcover, and seasonal color areas shall be top-dressed with a (4) four-inch (3" inches after settlement) minimum layer of mulch within 48 hours after planting. Install no more than 1.5" of mulch over the top of the root balls of all plants. See Section 2.01 M.
- 3.06 CLEAN-UP
- A. After all planting operations have been completed, remove all trash, excess soil, empty plant containers, rubbish, and all debris associated with this Contract from the site. All scars, ruts, trench settlement, or other marks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site. The Contractor shall pick up all trash resulting from this work no less frequently than each Friday before leaving the site, once a week, or the last working day of each week. All trash shall be removed completely from the site.

- B. The Contractor shall leave the site area broom-clean and shall wash down all paved areas within the Contract area, leaving the premises in a clean condition. All walks shall be left in a clean and safe condition.

3.07 OBSERVATION SCHEDULE

- A. The Contractor shall be responsible for notifying the Landscape Architect in advance for the following site visits, according to the time indicated:
 - 1. Pre-job Conference - 7 days
 - 2. Final grade review - 2 days
 - 3. Plant material review - 2 days
 - 4. Plant lay-out review - 2 days
 - 5. Soil Preparation and planting operations - 2 days
 - 6. Pre-maintenance - 7 days
 - 7. Final inspection - 7 days
- B. When observations are conducted by someone other than the Landscape Architect, the Contractor shall show evidence, in writing, of when and by whom these observations were made.
- C. NO site visits shall commence without all items noted in previous Observation Reports either completed or remedied unless such compliance has been waived by the Owner. Failure to accomplish punch list tasks or prepare adequately for desired inspections shall make the Contractor responsible for reimbursing the Landscape Architect at his current billing rates per hour, portal to portal (plus transportation costs) for the inconvenience. NO further inspections shall be scheduled until this charge has been paid and received.

3.08 90 DAY MAINTENANCE

- A. The maintenance period shall commence when the Notice of Substantial Completion is issued and shall continue as required for a period of 90 days.
- B. Plants shall be inspected at least once per week by the Contractor during the installation period and needed maintenance performed promptly.
- C. The Contractor shall irrigate all plants adequately to maintain optimum supply of moisture within the root zone; recurring overly dry or wet conditions shall be grounds for rejection of plant material. If the irrigation system is inoperative, hand watering shall be accomplished from a source approved by the Landscape Architect. Water shall not be applied with a force that will displace mulch or cause soil erosion and shall not be applied so quickly that it cannot be absorbed by the mulch and plants.
- D. Plants shall be pruned, and mulch shall be replaced as required.
- E. Tree stakes and guys shall be adjusted or replaced as required. Repair eroded plant saucers.
- F. Always maintain all plant beds and tree saucers weed-free.

- G. Keep plants free of insects and disease. All insecticides and fungicides applied to control pests and maintain plants in a healthy growing condition shall be approved by the Landscape Architect.
- H. Fertilize plants at once during the warranty period. Fertilization shall be applied by topdressing 2 pounds per 100 square feet of bed area, and 3 to 5 pounds each tree. Fertilizer for the application shall be a controlled release type used for the installation.
- I. Remove and replace, at no cost to Owner, dead and unacceptable plants as their condition becomes apparent.

END OF SECTION

SECTION 33 40 00
STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provisions established within the General and Supplementary General Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SUMMARY

- A. Work Included:
 - 1. Installation of pipe material.
 - 2. Construction of drainage system structures including curb inlets, junction boxes and catch basins.
 - 3. Ditch-out for storm drainage system discharge.
- B. Related Work Specified in Other Sections
 - 1. Section 31 23 33 - Trenching and Backfilling
 - 2. Section 31 00 00 - Earthwork

1.03 COORDINATION

- A. Contractor shall coordinate installation of drainage system with other construction throughout the site.
- B. All construction shall conform to applicable City Specifications for Construction.
- C. All work of this Section shall be completed within the limits of the site property boundary or designated offsite easements.

1.04 REFERENCES

- A. ASTM C76: Specification for Reinforced Concrete Pipe.
- B. AASHTO M294 HDPE Pipe
- C. ASTM F477 HDPE Fittings

1.05 SUBMITTALS

- A. All pipe and fittings not covered by this specification shall be approved by the engineer seven days prior to bid.

PART 2 - PRODUCTS

2.01 PIPE

- A. Reinforced concrete pipe shall be Class III.
- B. Plastic pipe shall be PVC SDR35 or Schedule 40 or HDPE heavy wall meeting the requirements of ASTM 2648 and ASTM F477 with corrugated exterior with smooth lined interior. All pipe joints and fittings shall be watertight.

- C. ADS HP Storm polypropylene pipe (dual wall) meeting the requirements of AASHTO M330, ASTM F2736 and ASTM F2881 with smooth inner wall and annular exterior corrugations. All pipe joints and fittings shall be watertight.

2.02 DRAINAGE STRUCTURES

- A. Materials for the construction of inlets and junction boxes shall be as specified in Division 700, "Structures" of the NCTCOG's Standard Specifications for Construction.

PART 3 - EXECUTION

3.01 GENERAL

- A. The locations of all structures and lines and grades of all pipes shall be staked by a registered surveyor. All facilities shall be located according to the site layout plans.
- B. Contractor shall utilize necessary measures, including temporary pumping in order to drain storm water offsite until the public drainage improvements are installed and operational.

3.02 PIPES

- A. All pipes shall be inspected prior to installation. Damaged pipes shall not be used. Replacement of damaged pipe shall be made by the Contractor at no expense to the owner.
- B. Installation shall be in accordance with ASTM D2321 and as recommended by the pipe manufacturer. Backfill shall be ASTM D2321 Class I, II or III soils.
- C. Pipe installation shall conform to the North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction & City specifications.
- D. Concrete collars shall be constructed where there is a change in pipe material

3.03 DRAINAGE STRUCTURES

- A. Construction of curb inlets tops and catch basins in pavement areas shall be **cast-in-place only** with **no precast structures allowed**. All manholes in pavement areas shall be held below pavement and the frame/lid shall be adjusted to final grade with grade rings. There should be no abrupt grade changes at manholes rims. **If abrupt grade changes are present, grade adjustments will be required.** Catch basins and headwalls outside of pavement areas shall be either cast-in-place or precast.
- B. Connections of pipe to structures shall be completely mortared around the perimeter of the pipe to ensure watertight connection to the structure prior to backfilling. All bends and tees shall be precast/preformed.
- C. Inlet top and throat shall be poured once pavement improvements are in place.

END OF SECTION