

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF DENTON, A TEXAS HOME-RULE MUNICIPAL CORPORATION, AUTHORIZING THE CITY MANAGER TO EXECUTE A CONTRACT WITH GAGE & CADE CONSTRUCTION, LLC, FOR THE HOME CHEMICALS AND RECYCLING CENTER IMPROVEMENTS FOR THE SOLID WASTE AND RECYCLING DEPARTMENT; PROVIDING FOR THE EXPENDITURE OF FUNDS THEREFOR; AND PROVIDING AN EFFECTIVE DATE (CSP 8845 – AWARDED TO GAGE & CADE CONSTRUCTION, LLC, IN THE NOT-TO-EXCEED AMOUNT OF \$614,738.00).

WHEREAS, the City has solicited, received, and evaluated competitive proposals for the Home Chemicals and Recycling Center Improvements for the Solid Waste and Recycling Department; and

WHEREAS, the City Manager, or a designated employee, has received, reviewed, and recommended that the herein described proposals are the most advantageous to the City considering the relative importance of price and the other evaluation factors included in the competitive sealed proposals; and

WHEREAS, this procurement was undertaken as part of the City’s governmental function [Building codes and inspection]; and

WHEREAS, the City Council has provided in the City Budget for the appropriation of funds to be used for the purchase of the materials, equipment, supplies, or services approved and accepted herein; NOW, THEREFORE,

THE COUNCIL OF THE CITY OF DENTON HEREBY ORDAINS:

SECTION 1. The items in the following numbered competitive sealed proposal for materials, equipment, supplies, or services shown in the “Competitive Sealed Proposals” on file in the office of the Purchasing Agent, are hereby accepted and approved as being the most advantageous to the City considering the relative importance of price and the other evaluation factors included in the competitive sealed proposal.

<u>CSP NUMBER</u>	<u>CONTRACTOR</u>	<u>AMOUNT</u>
8845	Gage & Cade Construction, LLC	\$614,738.00

SECTION 2. That by the acceptance and approval of the above numbered items of the submitted proposals, the City accepts the offer of the persons submitting the proposals for such items and agrees to purchase the materials, equipment, supplies, or services in accordance with the terms, specifications, standards, quantities, and for the specified sums contained in the Proposal Invitations, Proposals, and related documents.

SECTION 3. That should the City and person submitting approved and accepted items wish to enter into a formal written agreement as a result of the acceptance, approval, and awarding of the proposals, the City Manager, or their designated representative, is hereby authorized to execute the written contract which shall be attached hereto; provided that the written contract is in accordance with the terms, conditions, specifications, standards, quantities, and specified sums contained in the Proposal and related documents herein approved and accepted.

SECTION 4. The City Council of the City of Denton hereby expressly delegates the authority to take any actions that may be required or permitted to be performed by the City of Denton under this ordinance to the City Manager of the City of Denton, or their designee.

SECTION 5. By the acceptance and approval of the above enumerated bids, the City Council hereby authorizes the expenditure of funds therefor in the amount and in accordance with the approved bids.

SECTION 6. This ordinance shall become effective immediately upon its passage and approval.

The motion to approve this ordinance was made by _____ and seconded by _____. This ordinance was passed and approved by the following vote [___ - ___]:

	Aye	Nay	Abstain	Absent
Mayor Gerard Hudspeth:	_____	_____	_____	_____
Vicki Byrd, District 1:	_____	_____	_____	_____
Brian Beck, District 2:	_____	_____	_____	_____
Suzi Rumohr, District 3:	_____	_____	_____	_____
Joe Holland, District 4:	_____	_____	_____	_____
Brandon Chase McGee, At Large Place 5:	_____	_____	_____	_____
Jill Jester, At Large Place 6:	_____	_____	_____	_____

PASSED AND APPROVED this the _____ day of _____, 2025.

GERARD HUDSPETH, MAYOR

ATTEST:
INGRID REX, CITY SECRETARY

BY: _____

APPROVED AS TO LEGAL FORM:
MACK REINWAND, CITY ATTORNEY

BY: Leah Bush



Docusign City Council Transmittal Coversheet

FILE	8845
File Name	RECYCLING CENTER FACILITY IMPROVEMENTS
Purchasing Contact	Crystal Westbrook
City Council Target Date	
Piggy Back Option	Not Applicable
Contract Expiration	
Ordinance	

STIPULATED SUM VERTICAL CONSTRUCTION CONTRACT

BY AND BETWEEN

CITY OF DENTON

AND

GAGE & CADE CONSTRUCTION, LLC

TABLE OF CONTENTS

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A	GENERAL CONDITIONS
EXHIBIT B	DRAWINGS AND SPECIFICATIONS; ON FILE WITH THE PURCHASING AGENT
EXHIBIT C	KEY PERSONNEL
EXHIBIT D	ALTERNATES – None
EXHIBIT E	ALLOWANCE – None
EXHIBIT F	UNIT PRICE PROPOSAL FORM
EXHIBIT G	INITIAL SCHEDULE OF VALUES– None
EXHIBIT H	CONTRACTOR’S CONSTRUCTION SCHEDULE
EXHIBIT I	ESCROW AGREEMENT– None
EXHIBIT J	CONFLICT OF INTEREST QUESTIONNAIRE
EXHIBIT K	PROPOSAL FORM
EXHIBIT L	PREVAILING WAGE RATES
EXHIBIT M	INSURANCE AND BONDS (TO BE COMPLETED AFTER CONTRACT AWARD)

STIPULATED SUM VERTICAL CONSTRUCTION CONTRACT

This Stipulated Sum Vertical Construction Contract (this “Agreement”) made as of the ____ day of _____ in the year 20____ (the “Effective Date”) between City of Denton, a Texas home rule municipal corporation located at 215 East McKinney Street Denton, Texas 76201 (the “Owner” or “City”) and Gage & Cade Construction, LLC at 1107 County Road 264, Bertram, TX 78605 (the “Contractor”) for the following Project:

CSP #8845 RECYCLING CENTER FACILITY IMPROVEMENTS

The Owner and Contractor agree as follows:

Article 1. THE CONTRACT DOCUMENTS

Section 1.1 The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in the above table of contents, documents issued as part of the solicitation for the Project, this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9. In the event any provision contained in this Agreement conflicts with any provision contained in the Contract Documents, the more stringent provision for the Contractor, as interpreted by the Owner, shall govern.

Section 1.2 If, and to the extent of, any inconsistency, ambiguity, discrepancy or error in the Contract Documents (referred to collectively in this Section 1.2 as discrepancy), the Contractor shall immediately seek clarification from Biggs & Mathews Environmental, Inc. (the “Design Professional” or “Architect” or “Engineer” as reference may be made in the Contract Documents) and notify the Owner and Contractor that clarification has been requested. In the event that the Design Professional fails to clarify such discrepancy, within a reasonable time under the circumstances, the Contractor shall proceed with the Work without the clarification based on written permission from the Owner, and give precedence to the Contract Documents in the following descending order of priority:

- a. Modifications issued after execution of the Owner-Contractor Agreement, including all exhibits not specifically referenced in this Section 1.2;
- b. the Owner-Contractor Agreement;

- c. Addenda issued prior to the execution of the Owner-Contractor Agreement, with the Addenda bearing the latest date taking precedence;
- d. the General Conditions of the Contract for Construction;
- e. Exhibit "B" - Drawings and Specifications;

Article 2. THE WORK OF THIS CONTRACT

Section 2.1 The Contractor shall in a good workmanlike manner, fully execute the Work described in, and reasonably inferable by the Contractor as necessary to provide the results intended by fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others: and the Contractor at its sole cost, risk, and expense shall construct, equip, provide purchase, pay for, and furnish all of the Work in accordance with such Contract Documents. and governmental codes and regulations as they apply to performance of the Work.

Section 2.2 An Index of Drawings and Specifications which have been furnished to the Contractor as of the date of this Agreement is set forth in Exhibit "B" – Drawings and Specifications.

Section 2.3 The Contractor shall not be entitled to any adjustments in the Contract Sum or the Contract Time as a result of any action, or failure to act, in connection with any work or other services performed by the Contractor, or any entity affiliated with the Contractor, for portions of the Project other than the Work, such as, without limitation, other projects for this Owner or nearby the Project site, whether such work or other services are performed under contract with the Owner or an independent third party.

Section 2.4 The Contractor shall proceed with performance of the Work as required by the Contract Documents and shall not modify such requirements unless such modifications are accepted by the Owner in a Change Order or Construction Change Directive. The Contractor shall not be entitled to receive any additional fees as a result of any modification requests or recommendations submitted by the Contractor.

Section 2.5 The Contractor shall furnish only skilled and properly trained staff for the performance of the Work. The key members of the Contractor's staff shall be persons agreed upon with the Owner and Contractor and identified in Exhibit "C" – Key Personnel, which is attached hereto and incorporated herein for all purposes.

- a. Such key members of the Contractor's staff shall not be changed without the written consent of the Owner and Contractor, unless such person becomes unable to perform any required duties due to death, disability or termination of employment with the

Contractor. If a key member is no longer capable of performing in the capacity described in Exhibit "C" – Key Personnel, the Owner, Design Professional, and the Contractor shall agree on a mutually acceptable substitute.

- b. During the performance of the Work, the Contractor shall keep a competent superintendent at the Project site, who is fully authorized to act on behalf of the Contractor. Notice from the Owner, Contractor or the Design Professional to such superintendent, in connection with defective Work, instructions for performance of the Work or any and all other issues shall be considered notice of such issues to the Contractor.

Article 3. DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

Section 3.1 The construction of the Work to be performed under this Contract shall be commenced within three (3) calendar days after receipt of a building permit and Owner's Notice to Proceed.

Issuance of a Notice to Proceed for construction of the Work is subject to Owners acceptance of the Contractor's proposed Construction Management Plan, and receipt of a building permit.

The Contractor shall notify the Owner in writing, with confirmation of receipt, not less than three (3) business days before commencing the Work on the Project site to permit timely filing of mortgages, mechanics' liens, and other security interests.

Section 3.2 The Contract Time shall be measured from the date of Notice to Proceed.

Section 3.3 Substantial Completion

- a. Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall diligently prosecute the Work and shall achieve Substantial Completion of the entire Work by 270 days.
- b. If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, shall be as specified in Section 8.6 of Exhibit A - General Conditions for the Contract for Construction.

Section 3.4 Final Completion

- a. Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall diligently prosecute the Work and shall achieve final completion of the entire Work by 300 days.

- b. If the Contractor fails to achieve final completion as provided in this Section 3.3, liquidated damages, shall be as specified in Section 8.6 of Exhibit A - General Conditions for the Contract for Construction.

Article 4. CONTRACT SUM

Section 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be five hundred eighty-five thousand four hundred sixty-five Dollars (\$585,465.00), subject to additions and deductions as provided in the Contract Documents. At the sole option of the City, five (5) percent contingency in the amount of twenty-nine thousand two hundred seventy-three Dollars (\$29,273.00) may be used for a total not-to-exceed amount of six hundred fourteen thousand seven hundred thirty-eight Dollars (\$614,738.00).

Section 4.2 Alternates

- a. Alternates, if any, included in the Contract Sum:

See Exhibit "D" – Alternates-none

- b. Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Provided, however, that the Contractor shall furnish the Owner with no less than fourteen (14) days prior written notice of the date upon which any of the alternatives set forth in Exhibit "D" – Alternates, must be accepted by the Owner in order for the Contractor to perform the Work covered by such alternates for the price(s) set forth therein; and without any adjustment to a Contractual Milestone date, the Contractor's Construction Schedule or the Contract Time. Upon acceptance, the Owner shall issue a Modification to this Agreement.

See Exhibit "D" – Alternates-none

Section 4.3 Allowances, if any, included in the Contract Sum:

See Exhibit "E" – Allowances-none

Section 4.4 Unit prices, if any are set forth in Exhibit "F" – Unit Costs, and such unit prices are considered complete and include all materials, equipment, labor, delivery, installation, overhead, and profit; and any other costs or expenses in connection with, or incidental to, the performance of that portion of the Work to which such unit prices apply.

See Exhibit “F” – Unit Costs

Section 4.5 Liquidated damages, if any:

See Exhibit A - General Conditions for the Contract for Construction

Section 4.6 Other:

Section 4.7 By executing this Agreement and furnishing the Owner with both Exhibit “E” – Allowances and Exhibit “G” – Initial Schedule of Values, the Contractor represents and warrants that the Contract Documents, materials, and information furnished by the Contractor as of the date of this Agreement, and the ongoing discussions and meetings between the Contractor and the Owner and Design Professional have described the scope, construction requirements and design intent for the Work in detail sufficient to enable the Contractor to firmly establish the Contract Sum and the Contract Time. The Contractor shall not be permitted to claim any adjustment in either the Contract Sum or Contract Time prior to Notice to Proceed in connections with the completion of the Work except as described in the Contract Documents.

Article 5. PAYMENTS

Section 5.1 Progress Payments

- a. Based upon Applications for Payment including all supporting documentation required by the Owner and submitted to the Design Professional and Owner by the Contractor; its review by the Design Professional and Owner; and Certificates for Payment issued by the Design Professional and Certificates for Payment issued by the Design Professional, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.
- b. The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.
- c. Provided that a certifiable Application for Payment is approved by the Design Professional not later than the «twenty-fifth (25th) » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « thirtieth (30th) » day of the « following » month. If a certifiable Application for Payment is received by the Design Professional after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « thirty » (« 30 ») calendar days after the Design Professional approves the Application for Payment.
- d. Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor and approved in advance by the Owner and Design Professional in accordance with the Contract Documents and the Construction Management Plan. The schedule of values shall allocate the entire Contract Sum among

the various portions of the Work and be prepared in such form, and supported by such data to substantiate its accuracy, as the Owner and Design Professional may require. This schedule of values, unless objected to by the Owner or Design Professional, shall be used as a basis for reviewing the Contractor's Applications for Payment.

- e. Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.
- f. In accordance with Exhibit A - General Conditions for the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:
 - i. The amount of each progress payment shall first include:
 - .1 That portion of the Contract Sum properly allocable to completed Work;
 - .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
 - .3 That portion of Construction Change Directives that the Design Professional determines, in the Design Professional's professional judgment, to be reasonably justified.
 - ii. The amount of each progress payment shall then be reduced by:
 - .1 The aggregate of any amounts previously paid by the Owner;
 - .2 The amount, if any, for Work that remains uncorrected and for which the Contractor or Design Professional has previously withheld or nullified a Certificate for Payment as provided in Article 9 of Exhibit A - General Conditions for the Contract for Construction;
 - .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
 - .4 For Work performed or defects discovered since the last payment application, any amount for which the Design Professional may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of Exhibit A - General Conditions for the Contract for Construction; and
 - .5 Retainage withheld pursuant to Section 5.1.g.
 - .6
- g. Retainage
 - i. For each progress payment made prior to Final Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

« Five Percent (5.0%) »

- h. Omitted.
- i. Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.
- j. Each Application for Payment shall, without limitation, conform with the requirements of Exhibit A - General Conditions for the Contract for Construction, as amended.
- k. In taking action on the Contractor's Applications for Payment, the Owner and Design Professional shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and shall not be deemed to represent that the Owner or Design Professional have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with this Section 5.1.k or other supporting data; that the Owner or Design Professional have made exhaustive or continuous on-site inspections; or that the Owner or Design Professional have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.
- l. Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site, and even with such approval the Contractor shall follow the procedures in the Contract Documents for such payments.
- m. In addition to other required items, the final Application for Payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and in compliance with applicable statutes of the State of Texas all in a form acceptable to the Owner:
 - .1 A current sworn statement from the Contractor setting forth all Subcontractors and any material suppliers with whom the Contract has entered into subcontracts; the amount of each such subcontract; the amount requested for any Subcontractor or material supplier in the Application for Payment; and the amount to be paid to the Contractor from such final payment;
 - .2 A current, duly executed waiver of mechanics' and material suppliers' liens from the Contractor conditional upon establishing receipt of payment or satisfaction of the payment requested by the Contractor in the current Application for Payment;
 - .3 A current Subcontractor's lien waiver for the current period, conditional only on payment from the Contractor, and duly executed, acknowledged sworn statement showing all Sub-subcontractors and material suppliers with whom the

Subcontractor has entered into sub-subcontracts, the amount of each such sub-subcontract, the amount requested for any Sub-subcontractor and material supplier in the requested progress payment, and the amount to be paid to the Sub-subcontractor from such final payment to the Subcontractor;

.4 A current, duly executed unconditional final waiver of mechanics' and material suppliers' liens from the Contractor and all Subcontractors and, when deemed appropriate by the Owner and Design Professional, from material suppliers and Sub-subcontractors establishing payment or satisfaction of payments of all amounts requested by the Contractor on behalf of such entities or persons in any previous Applications for Payment;

.5 A final certificate of occupancy issued by the appropriate governmental body in which the project is located;

.6 All maintenance and operating manuals;

.7 Digitally marked, fully accessible electronic files (not "plot files" or "PDFs") of both field record drawings and specifications reflecting "as-built" conditions;

.8 Digitally marked, accurately dimensioned, and fully accessible electronic files (not "plot files" or "PDFs") of drawings reflecting the location of any concealed utilities, mechanical or electrical systems, and components;

.9 any special guarantees or warranties required by the Contract Documents;

.10 assignments of all guarantees and warranties from subcontractors, vendors, suppliers, or manufacturers;

.11 a list of the primary contact names, email addresses, physical addresses, and telephone numbers of all Subcontractors and any other persons providing guarantees and warranties;

.12 all information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner, or the Design Professional; and

.13 If required by the Owner's title insurer, if any, the Contractor shall execute a personal gap undertaking in form and substance satisfactory to such title insurer.

Section 5.2 Final Payment

- a. Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of Exhibit A - General Conditions for the Contract for Construction, and to satisfy other requirements, if any, which necessarily survive beyond final payment; and

.2 a final Certificate for Payment has been issued by the Design Professional; and.

.3 the Contractor has provided, and the Owner has accepted as correct, all the information and documents required under Section 5.1.m above; and

.4 a complete release of all claims arising out of, related to or connected with Contractor's performance of the respective Phase under this Agreement, and any claims of Subcontractors, subject to any claims reserved in accordance with the terms of the General Conditions and an affidavit that so far as Contractor has knowledge or information, the release includes and covers all materials and services over which Contractor has control for which a claim could be filed, subject to any claims reserved in accordance with the terms of the General Conditions.

- b. The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Design Professional's final Certificate for Payment and the Contractor has provided Owner with all required documentation.

Section 5.3 Interest

Payments are due and payable within thirty (30) days of the date the Owner receives the Construction Manager's approvable invoice, unless a different date for payment is provided under this Agreement. Amounts unpaid shall bear interest at the legal rate allowed by Texas Government Code Ch. 2251.

Article 6. DISPUTE RESOLUTION

Section 6.1 Initial Decision Maker

The Owner will serve as the Initial Decision Maker pursuant to Article 15 of Exhibit A - General Conditions for the Contract for Construction.

Section 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation or other alternative dispute resolution method as mutually agreed by the parties ("ADR") pursuant to Article 15 of Exhibit A - General Conditions for the Contract for Construction, the method of binding dispute resolution shall be litigation in a court of competent jurisdiction.

Article 7. TERMINATION OR SUSPENSION

Section 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of Exhibit A - General Conditions for the Contract for Construction, as amended.

If the Contract is terminated for the Owner's convenience in accordance with Article 14 of Exhibit A - General Conditions for the Contract for Construction, then the Owner shall pay the

Contractor a compensation calculated in the manner as specified in Section 14.4.c of Exhibit A - General Conditions for the Contract for Construction, as amended.

Section 7.2 The Work may be suspended by the Owner as provided in Article 14 of Exhibit A - General Conditions for the Contract for Construction, as amended.

Section 7.3 In the event of such termination by the Owner, the amount to be paid to the Contractor shall not exceed the amount the Contractor would have been entitled to receive under Article 5 above.

Section 7.4 In no event shall the Contractor be entitled to receive "Lost Opportunity Costs", defined as unabsorbed overhead costs or unrealized profit on this Work, future work for this Owner, other owner(s), other work, foregone opportunities for the Contractor, or other costs not directly and verifiably associated with services actually performed or Work successfully completed under this Agreement.

Article 8. MISCELLANEOUS PROVISIONS

Section 8.1 All references in this Agreement to Exhibit A, shall mean the Exhibit A - General Conditions for the Contract for Construction, as modified and amended by the parties hereto. Where reference is made in this Agreement to a provision of another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

Section 8.2 The Owner's representative:

City of Denton
Arturo Garcia
Project Manager
901B Texas Street
Denton, Texas 76209
(940) 349-8021
arturo.garcia@cityofdenton.com

Section 8.3 The Contractor's representative:

Gage & Cade Construction, LLC
Jason Reeves
1107 County Road 264
Bertram, TX 8605
(512)379-8176
jason@gageandcadeconstruction.com

Section 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

Section 8.5 Insurance and Bonds

- a. The Owner and the Contractor shall purchase and maintain insurance as set forth in Exhibit A - General Conditions for the Contract for Construction, Insurance and Bonds, and elsewhere in the Contract Documents.

Section 8.6 « Not Used. »

Section 8.7 Other Conditions and Services:

- a. The Contractor represents and warrants the following to the Owner (in addition to any other representation and warranties contained in the Contract Documents) as a material inducement to the Owner to execute this Agreement, which representations and warranties shall survive the execution and delivery of this Agreement, any termination of this Agreement, and final completion of the Work:
 - .1 The Contractor is financially solvent, capable of obtaining adequate insurance, able to pay all debts as they mature and possessed of sufficient working capital to complete the Work and perform all obligations hereunder;
 - .2 The Contractor is able to furnish the physical infrastructure, tools, materials, supplies, equipment and supervision, and labor required to complete the Work and perform its obligations hereunder and has sufficient experience and competence to do so;
 - .3 The Contractor is authorized to do business in the City of Denton, and the State of Texas and is properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over the Contractor and over the Work and the Project;
 - .4 The Contractor's execution of this Agreement and performance thereof is within the Contractor's duly-authorized powers;
 - .5 The Contractor's duly-authorized representative has visited the site of the Project and is familiar with the local conditions under which the Work is to be performed and has correlated its observations with the requirements of the Contract Documents;
 - .6 The Contractor possesses a high level of experience and expertise in the business administration, construction, construction management and superintendence of projects of this size, complexity and nature of this particular Project and will perform the Work with the care, skill and diligence of such a contractor;

.7 The foregoing warranties are in addition to, and not in lieu of, any and all other liability imposed upon the Contractor by law with respect to the Contractor's duties, obligations, and performance hereunder; and

.8 The Contractor acknowledges that the Owner is relying upon the Contractor's skill and experience in connection with the proper, timely and diligent prosecution of the Work.

- b. In the event any provision contained in this Agreement conflicts with any provision contained in the Contract Documents, the more stringent provision for the Contractor, as interpreted by the Owner, shall govern.
- c. Some or all of the Owner's duties, approvals and actions required under this Agreement may be provided by third parties by mutual agreement of the Owner and such third parties. When notified in writing of the specific duties and responsibilities of such third party, the Contractor will recognize the actions and approvals of the third party as sufficient to fulfill the Owner's responsibilities under this Agreement.
- d. The Contractor shall provide sufficient supporting documentation in form and with a level of detail wholly acceptable to the Owner and Contractor to substantiate any Application for Payment, request for Change to the Contract Sum or Contract Time, and all contract Allowances provided within the Contractor's Contract Sum for this scope of work. Failure to timely provide all supporting documentation, in and of itself, may result in rejection of the Application for Payment or requested change to the Contract Sum or Contract Time, or payment for work charged to the Allowance(s).
- e. Proof of purchase and warehouse insurance naming the Owner, Contractor and Design Professional as additional insureds, together with inspection rights for the Owner, Contractor and Design Professional is to be provided for any billed materials by the Contractor for the work not physically stored at the Project site.
- f. Time limits set out in or under this Agreement are solely for the protection and benefit of the Owner and create no third-party beneficiary rights in any other party.
- g. Notices. All legal notices, consents, approvals, demands, requests or other communications provided for or permitted to be given under any of the provisions of this Agreement shall be in writing and shall be deemed to have been duly given or served when delivered by hand delivery or when deposited in the U.S. mail by registered or certified mail, return receipt requested, postage prepaid, and addressed as follows:

If to Owner:

Arturo Garcia

Project Manager

City of Denton

901B Texas Street

Denton, Texas 76201

arturo.garcia@cityofdenton.com

City of Denton
ATTN: Contract 8845; Purchasing Manager
901B Texas Street
Denton, Texas 76209
purchasing@cityofdenton.com

And with a copy to City Attorney's point of contact:

City Attorney
City of Denton
215 East McKinney St.
Denton, TX 76201
legal@cityofdenton.com

If to Contractor:
Gage & Cade Construction, LLC
Jason Reeves
1107 County Road 264
Bertram, TX 8605
(512)379-8176
jason@gageandcadeconstruction.com

If to Design Professional:
Biggs & Mathews Environmental, Inc.
Gregory Adams
1700 Robert Road, STE 100
Mansfield, TX 76063
(817)563-1144
gadams@biggsandmathews.com

- h. All Exhibits referred to in this Agreement are, by reference, incorporated herein for all purposes.
- i. The numbering and captions of the sections are set forth only for convenience and reference and are not intended in any way to define, limit, or describe the scope or intent of this Agreement.
- j. The parties agree that they will execute any further instrument or instruments, and that they will perform any act or acts, which are or may become necessary to effectuate any of the terms or provisions of this Agreement.

- k. Nothing contained in this Agreement shall create a contractual relationship with a cause of action in favor of a third party against either the Owner or Contractor.
- l. This Agreement has been created jointly and ambiguity cannot be construed against either party.
- m. This Agreement is and shall be subject to those provisions required of political subdivisions by the laws of the State of Texas. The Contractor understands that the Owner is a Texas home rule municipality and that the project is subject to applicable provisions of Texas law including bid requirements, bonding, and final settlement provisions.
- n. Contractor understands that certain information, including this Agreement, are public records available for public inspection and copying under the Texas Open Records Act., Texas Government Code Ch. 552, as amended, and other applicable laws.
- o. The Owner represents that there are sufficient funds available to undertake this Project.
- p. No term or condition of the Agreement shall be construed or interpreted as a waiver, express or implied, of any of the governmental or sovereign immunities, rights, benefits, or protections of the Owner.
- q. Contractor warrants that the products, processes, techniques and methodologies provided by Contractor shall not infringe upon the copyright, patent or other proprietary rights of others.
- r. Contractor certifies and warrants that no gratuities, kickbacks or contingency fees were paid in connection with this Agreement, nor were any fees, commissions, gifts or other considerations made contingent upon the award of this Agreement. Contractor warrants that to the best of Contractor's knowledge, there exists no actual or potential conflict of interest, and no financial or substantial interest as may be prohibited by Texas law, the Charter, or Code of Ethics of the City of Denton between Contractor and Owner.
- s. Contractor shall comply with the disclosure and reporting requirements in Local Government Code Chapters 171 and 176, and Texas Government Code Sec. 2252.908. Under Sec. 2252.908, if City Council approval is required to award this Agreement or if this Agreement has a value of at least \$1,000,000, the City may not enter into the Agreement unless the Contractor submits a disclosure of interested parties to the City at the time the executed Agreement is presented to the City. The disclosure must be made on the form prescribed by the Texas Ethics Commission and the City is required to submit a copy of the disclosure statement to the Texas Ethics Commission not later than the 30th day after the disclosure is received by the City.
- t. In case any provision hereof shall, for any reason, be held invalid or unenforceable in any respect, such invalidity or unenforceability shall not affect any other provision hereof, and this Contract shall be construed as if such invalid or unenforceable provision had not been included herein.
- u. Contractor understands and agrees that TIME IS OF THE ESSENCE.

- v. This Agreement may be executed by the parties hereto in separate counterparts, each of which when so executed and delivered shall be an original, but all such counterparts shall together constitute one and the same instrument. Each counterpart may consist of any number of copies hereof each signed by less than all, but together signed by all of the parties hereto. Any documents submitted to the City in electronic format shall be considered equivalent to an original of such document.
- w. Any of the representations, warranties, covenants, and obligations of the Parties, as well as any rights and benefits of the Parties, pertaining to a period of time following the termination of this Agreement shall survive termination.

x. COMPLIANCE WITH CERTAIN STATE LAW

.1 Prohibition on Contracts with Companies Boycotting Israel. Contractor acknowledges that in accordance with Chapter 2271 of the Texas Government Code, City is prohibited from entering into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract. The terms “boycott Israel” and “company” shall have the meanings ascribed to those terms in Section 808.001 of the Texas Government Code. By signing this agreement, Contractor certifies that Contractor’s signature provides written verification to the City that Contractor: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the agreement. Failure to meet or maintain the requirements under this provision will be considered a material breach.

.2 Prohibition on Contracts with Companies Boycotting Certain Energy Companies. Contractor acknowledges that in accordance with Chapter 2274 of the Texas Government Code, City is prohibited from entering into a contract with a company for goods or services unless the contract contains written verification from the company that it (1) does not boycott energy companies; and (2) will not boycott energy companies during the term of the contract. The terms “boycott energy company” and “company” shall have the meanings ascribed to those terms in Section 809.001 of the Texas Government Code. By signing this agreement, Contractor certifies that Contractor’s signature provides written verification to the City that Contractor: (1) does not boycott energy companies; and (2) will not boycott energy companies during the term of the agreement. Failure to meet or maintain the requirements under this provision will be considered a material breach.

.3 Prohibition on Contracts with Companies Boycotting Certain Firearm Entities and Firearm Trade Associations. Contractor acknowledges that in accordance with Chapter 2274 of the Texas Government Code, City is prohibited from entering into a contract with a company for goods or services unless the contract contains written verification from the company that it (1) does not have a

practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association. The terms “discriminate against a firearm entity or firearm trade association,” “firearm entity” and “firearm trade association” shall have the meanings ascribed to those terms in Chapter 2274 of the Texas Government Code. By signing this agreement, Contractor certifies that Contractor’s signature provides written verification to the City that Contractor: (1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association. Failure to meet or maintain the requirements under this provision will be considered a material breach.

.4 Prohibition on Contracts with Companies Doing Business with Iran, Sudan, or a Foreign Terrorist Organization. Sections 2252 and 2270 of the Texas Government Code restricts CITY from contracting with companies that do business with Iran, Sudan, or a foreign terrorist organization. By signing this agreement, Contractor certifies that Contractor’s signature provides written verification to the City that Contractor, pursuant to Chapters 2252 and 2270, is not ineligible to enter into this agreement and will not become ineligible to receive payments under this agreement by doing business with Iran, Sudan, or a foreign terrorist organization. Failure to meet or maintain the requirements under this provision will be considered a material breach.

.5 Termination Right for Contracts with Companies Doing Business with Certain Foreign-Owned Companies. The City of Denton may terminate this Contract immediately without any further liability if the City of Denton determines, in its sole judgment, that this Contract meets the requirements under Chapter 2274, and Contractor is, or will be in the future, (i) owned by or the majority of stock or other ownership interest of the company is held or controlled by individuals who are citizens of China, Iran, North Korea, Russia, or other designated country (ii) directly controlled by the Government of China, Iran, North Korea, Russia, or other designated country, or (iii) is headquartered in China, Iran, North Korea, Russia, or other designated country.

.6 Pursuant to Chapter 2258, Texas Government Code, all contractors and any Subcontractor involved in the construction of a public work project shall pay not less than the prevailing rates as per diem wages in the locality at the time of construction to all laborers, workmen and mechanics employed by them in the execution of this contract. Contractor shall assure that these requirements are met for the Project and shall insure that every contract or subcontract relating to the Work requires, on behalf of Owner, that the prevailing wage rates be paid.

.7 The Contractor shall be provided an applicable Department of Labor Wage Rate Determination for use on the Project required by Chapter 2258.022, Texas Government Code. In the event the Owner does not provide this Labor Wage Rate Determination, the Contractor shall request it in writing in a timely manner, so as not to delay the Construction Manager's initial subcontractor procurement process during preconstruction. The Construction Manager shall, if requested by the Owner, assist the Owner in conducting a survey of the wages paid, by labor class, on projects of a similar type in a similar location.

Article 9. ENUMERATION OF CONTRACT DOCUMENTS

Section 9.1 This Agreement is comprised of the following documents:

- .1 Stipulated Sum Vertical Construction Contract
- .2 Exhibit "A" – General Conditions of the Contract for Construction
- .3 Exhibit "B" – Drawings and Specifications (On File with Purchasing Manager)
- .4 Addenda, if any:
See Exhibit "B" – Drawings and Specifications (On File with Purchasing Manager)
Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.
- .5 Other Exhibits:
Exhibit "C" – Key Personnel
Exhibit "D" – Alternates -none
Exhibit "E" – Allowances -none
Exhibit "F" – Unit Costs
Exhibit "G" – Initial Schedule of Values-none
Exhibit "H" – Contractor's Construction Schedule
Exhibit "I" – Escrow Agreement-none
Exhibit "J" – Conflict of Interest Questionnaire
Exhibit "K" – Proposal Form
Exhibit "L" – Prevailing Wage Rates
Exhibit "Y" – Contractor's Insurance Certificate(s) and Bonds (To be Completed after Contract Award)
- .6 Other documents, if any, listed below:

<< >>

This Agreement entered into as of the day and year first written above.

<div><div><div>CONTRACTOR:</div><div>GAGE & CADE CONTRUCTION, LLC</div><div><div>DocuSigned by:</div><div><div>BY:</div><div><div>Jason Reeves</div><div>A619B99E2C2448D...</div></div></div><div>JASON REEVES</div><div>TITLE Senior Vice President</div></div></div></div> <div><div><div>CITY:</div><div>CITY OF DENTON, TEXAS</div><div><div>BY:</div><div>SARA HENSLEY</div><div>CITY MANAGER</div></div></div></div>	<div><div><div>THIS AGREEMENT HAS BEEN</div><div>BOTH REVIEWED AND APPROVED</div><div>as to financial and operational obligations and business terms.</div><div><div>Signed by:</div><div><div>Brenda Haney</div><div>C3C63BE563154A1...</div></div><div>Brenda Haney</div></div><div><div>SIGNATURE</div><div>Director</div><div>TITLE</div><div>Director</div><div>DEPARTMENT</div></div><div><div>PRINTED NAME</div></div></div></div> <div><div><div>ATTEST:</div><div>INGRID REX, CITY SECRETARY</div><div><div>BY:</div></div></div></div>
	<div><div><div>APPROVED AS TO LEGAL FORM:</div><div>MACK REINWAND, CITY ATTORNEY</div><div><div>Signed by:</div><div><div>BY:</div><div><div>Leah Bush</div><div>2A936B08B5D7485...</div></div></div></div></div></div>

Section 00 72 00
Exhibit A – General Conditions
for the following PROJECT:
Recycling Center Facility Improvements

THE OWNER:

City of Denton
215 East McKinney Street
Denton, Texas 76201

THE DESIGN PROFESSIONAL:

Biggs & Mathews Environmental, Inc.
1700 Robert Road, Suite 100
Mansfield, Texas 76063

TABLE OF CONTENTS

1	GENERAL PROVISIONS
2	OWNER
3	CONTRACTOR
4	DESIGN PROFESSIONAL
5	SUBCONTRACTORS
6	CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7	CHANGES IN THE WORK
8	TIME
9	PAYMENTS AND COMPLETION
10	PROTECTION OF PERSONS AND PROPERTY
11	INSURANCE AND BONDS
12	UNCOVERING AND CORRECTION OF WORK
13	MISCELLANEOUS PROVISIONS
14	TERMINATION OR SUSPENSION OF THE CONTRACT
15	CLAIMS AND DISPUTES

Article 1. GENERAL PROVISIONS

Section 1.1 Basic Definitions

a. The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Proposal Documents, Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Design Professional. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

b. The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Design Professional or the Design Professional's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Design Professional or the Design Professional's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Design Professional shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Design Professional's duties. This Agreement was the result of negotiations between the Owner and Contractor, and has been reviewed by the Owner, Contractor and their respective counsel. Accordingly, this Agreement shall be deemed to be the product of both parties and no ambiguity shall be construed in favor of or against either party. The terms "Agreement" and "Contract" shall be used interchangeably to have the same meaning as defined in this Section 1.1.b.

c. The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, supplies, skill, supervision, transportation, support services, facilities and other resources necessary or proper or incidental to the carrying out and completion of the terms of the contract and all other items of cost or value needed to produce, construct and fully complete the Work identified by the Contract Documents. The Work may constitute the whole or a part of the Project.

d. The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

- e. **The Drawings**
The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.
- f. **The Specifications**
The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.
- g. **Design Documents**
Design Documents are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Design Professional and the Design Professional's consultants under their respective professional services agreements. Design Documents may include, without limitation, studies, surveys, models, sketches, drawings, specifications, the Project Manual and other similar materials.
- h. **Initial Decision Maker**
The Initial Decision Maker is the person identified in the Agreement to render initial decisions.
- i. **The Indemnitees**
The Owner, which includes the Mayor, members of the City Council, employees, agents, assigns, and other city officers, the Owner's consultants, the Design Professional, Design Professional's consultants, and the agents and employees of any of them shall hereafter be known as the "Indemnitees".
- j. **Construction Management Plan**
The Construction Management Plan is prepared by the Contractor for its use in managing the Work and is not a Contract Document. The Construction Management Plan must include, at a minimum and without limitation, the following separate deliverables, which are subject to review and approval by the Design Professional and Owner:
 - i. Safety and Logistics Plan;
 - ii. Contractor's Construction Schedule;
 - iii. Cost Management Plan, Control Estimate and Schedule of Values;
 - iv. Quality Management, Commissioning and Turnover Plan; and
 - v. Information Management System.
- k. **As-Built Documents**
The As-Built Documents are the Drawings, Specifications, and addenda thereto that may be updated by the Contractor to accurately reflect the actual Work in place, including without limitation, the incorporation of Change Orders, responses to the Contractor's requests for information, Design Professional's supplemental instructions, field modifications, and other similar changes made to the Work during construction. The As-Built documents shall conform to the format and compatibility requirements of Section 3.10.1.i.
- l. **Work Breakdown Structure**
The project's Work Breakdown Structure ("WBS") is a deliverable-oriented, hierarchical organization of the Project components to be executed by the Owner, and its accompanying numbering system. The WBS will be mutually agreed upon by the Owner and Design Professional and used by the Contractor.
- m. **Equal to (or Approved Equal)**

Products by manufacturers and information about those products other than those products specified in the Contract Documents which the Contractor may submit for substitution as equal to those products specified in the Contract Documents; which may be incorporated in the Work after using the process specified in the Contract Documents for review and acceptance by the Design Professional and acceptance of same by the Owner.

n. Underground Facilities

All underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

o. Force Majeure

An act of God, fire, tornado, hurricane, flood, earthquake, explosion, war on American soil, civil disturbance, labor strikes, and similar unavoidable circumstances beyond Contractor's control, not caused by the negligent act or omission of Contractor or breach of this Agreement, its Subcontractors, or anyone else for whom Contractor is responsible, and not caused by Contractor's breach of a project labor or a "no strike" agreement.

p. Knowledge

The terms "knowledge," "recognize" and "discover," their respective derivatives and similar terms in the Contract Documents, as used in reference to the Contractor, shall be interpreted to mean that which the Contractor knows or should know, recognizes or should recognize and discovers or should discover in exercising the care, skill, and diligence of a diligent and prudent contractor familiar with the Work. Analogously, the expression "reasonably inferable" and similar terms in the Contract Documents shall be interpreted to mean reasonably inferable by a diligent and prudent contractor familiar with the Work and in accordance with the highest standards in the construction profession.

q. Proposal

The offer or proposal of an Offeror submitted on the prescribed form setting forth the prices for the Work to be performed.

r. Offeror

The individual or entity that submits a Proposal directly to City.

s. Proposal Documents

The Proposal Requirements and the proposed Contract Documents including all addenda.

t. Proposal Requirements

The Advertisement or Request for Proposal, Invitation to Offerors, Instructions to Offerors, Offeror's Bond or other Proposal security, the Proposal Form, and the Proposal with any attachments.

u. Notice of Award

A written notice given by City to the Successful Offeror stating that upon timely compliance by the Successful Offeror with the conditions precedent listed in such notice, City will sign and deliver the Agreement.

v. Calendar Day

A day consisting of 24 hours measures from midnight to the next midnight. A "day" or "Day" unless otherwise defined shall mean a Calendar Day.

w. **Business Day**

A day that the City conducts normal business, generally Monday through Friday, except for federal or state holidays observed by the City.

x. **Notice to Proceed**

A written instrument from the Owner to the Contractor requiring the Contractor to proceed with performance of activities, including, but not limited to development of submittals, ordering of materials, and any other services (the "Preconstruction Services") required to prepare for and expedite the construction of the Work as required by the Contract Documents; and complete the Work (the "Construction Services").

Section 1.2 Correlation and Intent of the Contract Documents

- a. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. Where a conflict occurs between or within standards, specifications, and drawings, the more stringent or higher quality requirements shall apply. The precedence and coordination of the Contract Documents are as follows:

.1 Any addenda and modifications to the Drawings and Specifications take precedence over any earlier Contract Documents.

.2 Should there be a conflict within the Specifications, or within the Drawings, or between the Drawings and Specification, the Design Professional shall decide which stipulation will provide the best installation and its decision shall be final.

.3 The Drawing and Specifications are intended to coordinate with each other. Anything shown on the Drawings but not mentioned in the Specification or vice-versa, or anything not expressly set forth in either, but which is reasonably implied, shall be furnished as though specifically shown and mentioned in both without any extra charge.

.4 The Drawings, for purposes of clearness and legibility, are essentially diagrammatic, and although the sizes and locations of equipment are shown to scale wherever possible, the Contractor, Subcontractors, and Sub-subcontractors are required to familiarize themselves with all the Work required by the Contract Documents. Each Contractor, Subcontractor, and Sub-subcontractor shall properly coordinate its work with that of the Owner and all Separate Contractors. It is not within the scope of the Drawings to show all necessary offsets, obstructions or structural conditions. It shall be the responsibility of each Contractor to plan, coordinate, and install its work in such a manner so as to conform to the structure. Any conflict within the Drawings shall be referred to the Design Professional for disposition prior to the installation of any affected work.

.5 Figured dimensions contained in the Contract Documents shall be accurately followed, even though they differ from scaled measurements. No work shown on the plans, the dimensions of which are not figured, shall be executed until instructions have been obtained from the Design Professional as to the dimensions to be used. Larger scale Drawings shall have preference over smaller scale drawings, but discrepancies shall be referred to the Design Professional for interpretation.

.6 Underground Facilities

Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the Site is based on information and data furnished to City or Engineer by the owners of such Underground Facilities, including City, or by others, unless it is otherwise expressly provided in the Supplementary Conditions:

City and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

- reviewing and checking all information and data;
- verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
- coordination and adjustment of the Work with the owners (including City) of such Underground Facilities, during construction; and
- the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

Not Shown or Indicated: If an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings or otherwise indicated in the Contract Documents, or was not shown or indicated on the Drawings or in the Contract Documents 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, identify the owner of such Underground Facility and give notice to that owner and to City. Contractor shall be responsible for the safety and protection of such discovered Underground Facility.

If City concludes that a change in the Contract Documents is required, a Change Order may be issued to reflect and document such consequences, subject to the provisions of Article 7.

Verification of existing utilities, structures, and service lines shall include notification of all utility companies a minimum of 48 hours in advance of construction including exploratory excavation if necessary.

.7 Reliance by Contractor on Technical Data:

Contractor is provided certain technical data with respect to such reports and drawings for its use, but the City does not warrant or guarantee the accuracy of the information, and such information including reports and drawings are not Contract Documents. Contractor may not make any Contract Claim against City, or any of its officers, elected or appointed officials, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

the completeness or accuracy 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

other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or City's archival documents concerning the Site; or

any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

- i. The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.
- b. Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.
- c. Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

Section 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents that are a part of this Contract.

Section 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

Section 1.5 Ownership and Use of Design Documents

- a. Submittal or distribution of the Design Documents or any portion thereof to meet official laws, statutes, ordinances and regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Owner's reserved rights.

- b. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers are authorized to use and reproduce the Design Documents provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Design Documents. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Design Documents on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner.

Section 1.6 Notice

- a. Except as otherwise provided in Section 1.6.b, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement. In the event notice is provided by mail, it shall be sent certified return receipt requested.
- b. Notice of Claims as provided in Section 15.1.c shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

Section 1.7 Digital Data Use and Transmission

- a. The parties shall agree upon protocols governing the transmission and use of Design Documents or any other information or documentation in digital form. The parties will establish the protocols for the development, use, transmission, and exchange of digital data in writing, as mutually agreed.
- b. The Contractor, at any time upon the request of the Owner, shall immediately return and surrender to the Owner, without limitation, all electronic and hard copies of any Project-related materials, records, notices, memoranda, recordings, drawings, specifications, mock-ups and any other documents furnished by the Owner or the Design Professional to the Contractor.

Section 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without written agreement to protocols governing the use of, and reliance on, the information contained in the model, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

Section 1.9 The representations and warranties contained in the Contract Documents shall survive the complete performance of the Work or earlier termination of this Agreement.

Article 2. OWNER

Section 2.1 General

- a. The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.a, the Design Professional does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.
- b. The Owner shall furnish the following information to a person, including the Design Professional or Contractor, who makes a request for information under Texas Government Code Chapter 2253, related to a payment or performance bond: (1) a certified copy of a payment bond and any attachment to the bond; (2) the public work contract for which the bond was given; and (3) the toll-free telephone number maintained by the Texas Department of Insurance under Subchapter B, Chapter 521, Insurance Code, for obtaining information concerning licensed insurance companies.
- c. **The Owner may obtain independent review(s) of the Design Professional's Design Documents, or of any document or other materials submitted by the Contractor, by a separate architect, engineer, contractor, cost estimator or any other consultant they deem necessary and put under contract to or cause to be employed by the Owner. Such independent review shall be undertaken at the Owner's expense in a timely manner and shall not delay the orderly progress of the Work. The Design Professional and Contractor shall cooperate with such Owner's other consultants fully and respond to their reviews and comments in writing in a timely and comprehensive manner. This provision shall not be interpreted to require the Owner to obtain an independent review or imply that the Owner is in any way assuming responsibility for the work of the Design Professional and Contractor.**

Section 2.2 Evidence of the Owner's Financial Arrangements

- a. Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract.
- b. Following commencement of the Work and within ten (10) business days of written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.b, the Contract Time shall be extended appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

- c. After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.
- d. Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information. Notwithstanding the above, all Agreements with the Owner shall have all references to compensation redacted before disclosing to Subcontractors, sub-Subcontractors, or any other tier of vendor.

Section 2.3 Information and Services Required of the Owner

- a. Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.a, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.
- b. The Owner shall retain a Design Professional lawfully licensed to practice architecture or engineering as applicable, or an entity lawfully practicing architecture or engineering, as applicable, in the jurisdiction where the Project is located. That person or entity is identified as the Design Professional in the Agreement and is referred to throughout the Contract Documents as if singular in number.
- c. If the employment of the Design Professional terminates, the Owner shall employ a successor whose status under the Contract Documents shall be that of the Design Professional.
- d. The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.
- e. The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.
- f. Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.b.
- g. The foregoing are, without limitation and in addition to, the other duties and responsibilities of the Owner specified in Article 6; Article 9; and Article 11.

Section 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or fails to carry out Work in accordance with the

Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.c nor shall the exercise of the Owner's right hereunder give rise to any claim by Contractor for additions to the Contract Sum or Contract Time.

Section 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within forty-eight (48) hours from receipt of written notice from the Owner or Design Professional to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. The Design Professional may, at the direction of the Owner, pursuant to Section 9.5.a, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Design Professional's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Design Professional, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

Section 2.6 Extent of Owner Rights

- a. The rights stated in this Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner granted in the Contract Documents; at law; or in equity.
- b. In no event shall the Owner or Design Professional have control over, charge of, or any responsibility for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work. Notwithstanding anything else herein, and without limitation, any review(s), independent or otherwise, or approval(s) by the Owner or Design Professional of the Design Documents, the Contract Documents, the Contractor's Construction Management Plan(s), the Contractor's Construction Schedule, shop drawings, submittals, meeting minutes or other Contractor's services, deliverables or activities; nor the exercising of any of the rights and authority granted the Owner or Design Professional in the Contract Documents shall in any way reduce, diminish, or otherwise affect the Contractor's responsibilities, duties and accountability to the Owner for, without limitation, the construction means, methods, techniques, sequences, procedures or for safety precautions, and the provision of the Work per the requirements of the Contract Documents.
- c. The Owner reserves the right to have the Contractor and/or subcontractors remove person(s) and/or personnel from any and all work on the Project for cause but without cost to the Owner. Such requests from the Owner will be made in writing and may be done directly or indirectly through the Design Professional/Engineer or on-site representative. "Cause" may include, but is not limited to, any of the following: incompetence, poor workmanship, poor scheduling abilities, poor coordination, disruptive to the project, the facility or others, poor management, cause delay or delays, will not strictly adhere to facility procedures and project requirements either willfully

or unknowingly, insubordination, drug/alcohol use, possession of contraband, belligerent acts or actions, etc. The Contractor shall provide replacement person(s) and/or personnel acceptable to the Owner at no cost to the Owner.

Article 3. CONTRACTOR

Section 3.1 General

- a. The Contractor is the person or entity identified as such in the Contract or Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located, Denton County, Texas. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.
- b. The Contractor shall perform the Work in accordance with the Contract Documents.
- c. The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Design Professional in the Design Professional's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

Section 3.2 Review of Contract Documents and Field Conditions by Contractor

- a. Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. Prior to execution of the Agreement, the Contractor and each Subcontractor have evaluated and satisfied themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project site and surrounding areas and generally prevailing climatic conditions; (ii) anticipated labor supply and costs; (iii) availability and cost of materials, tools, and equipment; and (iv) other similar issues. The Owner and Design Professional assume no responsibility or liability for the physical condition or safety of the Project site, or any improvements located on the Project site. Except as set forth in Section 10.3, the Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner and Design Professional shall not be required to make any adjustment in either the Contract Sum or the Contract Time in connection with any failure by the Contractor or any Subcontractor to have complied with the requirements of this Section 3.2.a.
- b. Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.d, shall take field measurements of and verify any existing conditions related to that portion of the Work, and shall observe and verify the impact of any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Design Professional any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for

information in such form as the Design Professional may require. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Design Professional, the Contractor shall assume appropriate responsibility for such performance and shall bear an appropriate amount of the attributable costs for correction per Section 12.2. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

- c. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Design Professional any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Design Professional may require.
- d. If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Design Professional issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.b or 3.2.c, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.b or 3.2.c, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.g, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Design Professional for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities unless such error, inconsistency or omission could be ascertained from a careful study of the Contract Documents in its capacity as a contractor and not as a design professional.

Section 3.3 Supervision and Construction Procedures

- a. The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work in accordance with the Contract Documents.
- b. The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.
- c. The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.
- d. The Contractor shall carefully check its own work and that of Subcontractors as the Work is being performed.
- e. During the finishing stages of the project, the Contractor shall make frequent inspections of the Work, with the applicable Subcontractor(s) involved, if any, with seven (7) days advance notice to the Design Professional, and the Contractor shall identify incorrect and faulty Work.
- f. The Contractor shall ensure that incorrect or faulty Work is corrected immediately.
- g. The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Design Professional in their

administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

Section 3.4 Labor and Materials

- a. Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.
- b. The Contractor is encouraged to consider products and systems that improve the project and retain the character of the products specified, but do not alter the intent of the project. However, except in the case of minor changes in the Work authorized by the Design Professional in accordance with Sections 3.12.h or 7.4, the Contractor may make substitutions only by a formal request for substitution of products in place of those specified with the consent of the Owner, after evaluation by the Design Professional in accordance with the conditions set forth below and elsewhere in the Contract Documents, and a Change Order or Construction Change Directive. The Contractor must submit to the Design Professional and the Owner, for each proposed substitution:

- .1 A full explanation of the proposed substitution and submittal of all supporting data, including technical information, catalog "cut sheets", warranties, test results, installation instructions, operating procedures, and other like information necessary for a complete evaluation of the substitution;

- .2 A written explanation of the reasons the substitution is advantageous and necessary, including the benefits to the Owner and the Work in the event the substitution is acceptable;

- .3 The adjustment, if any, in the Contract Sum, in the event the substitution is acceptable;

- .4 The adjustment, if any, in the time of completion of the Contract and the Contractor's Construction Schedule in the event the substitution is acceptable;

- .5 An affidavit stating that (1) the proposed substitution conforms to and meets all the requirements of the pertinent Specifications and the requirements shown on the Drawings, and (2) the Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Design Professional;

- .6 Proposals for substitutions shall be submitted electronically to the Design Professional and the Owner's other consultants, if any, in sufficient time to allow no less than ten (10) business days for their respective reviews;

- .7 No substitutions will be considered or allowed without the Contractor's submittal of complete substantiating data and information as stated herein; and

- .8 Substitutions and alternates may be rejected without explanation and will be considered only under one or more of the following conditions: (1) the proposal is required for compliance with interpretation of code requirements or insurance regulations then existing; (2) specified products are unavailable through no fault of the Contractor; (3) subsequent information discloses the

inability of specified products to perform properly or to fit in the designated space; (4) the manufacturer/fabricator refuses to certify or guarantee the performance of the specified product as required; and (5) when, in the judgment of the Owner or the Design Professional, a substitution would be substantially in the Owner's best interests, in terms of cost, time, or other considerations; and

.9 Whether or not any proposed substitution is accepted by the Owner, the Owner's other consultants, if any (if any), or the Design Professional, the Contractor shall reimburse the Owner for any fees charged by the Design Professional, and the Owner's other consultants for evaluating each proposed substitute.

- c. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. Smoking and chewing of tobacco products is prohibited in enclosed new construction. No glass bottles shall be brought on the construction site or Owner's property by any construction personnel.
- d. All work under this Agreement shall be performed in a skillful and workmanlike manner in accordance with the highest industry standards.
- e. The Contractor shall only employ or use labor in connection with the Work capable of working harmoniously with all trades, crafts, and any other individuals associated with the Project. The Contractor shall also use best efforts to minimize the likelihood of any strike, work stoppage, or other labor disturbance.

.1 If the Work is to be performed by trade unions, the Contractor shall make all necessary arrangements to reconcile, without delay, damage, or cost to the Owner and without recourse to the Design Professional or the Owner, any conflict between the Contract Documents and any agreements or regulations of any kind at any time in force among members or councils that regulate or distinguish the activities that shall not be included in the work of any particular trade; and

2 In case the progress of the Work is affected by any undue delay in furnishing or installing any items or materials or equipment required under the Contract Documents because of such conflict involving any such labor agreement or regulation, the Owner may require that other material or equipment of equal kind and quality be provided pursuant to a Change Order or Construction Change Directive.

Section 3.5 Warranty

- a. The Contractor warrants to the Owner and Design Professional that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform with the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal

wear and tear and normal usage. If required by the Design Professional, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. **THE CONTRACTOR SHALL DEFEND AND HOLD THE OWNER HARMLESS AGAINST ANY CLAIM, DEMAND, LOSS, OR DAMAGE BY ANY BREACH OF THIS WARRANTY, AND CONTRACTOR ACKNOWLEDGES IT SHALL NOT LIMIT SUCH WARRANTY BY THE PROVISIONS OF SECTION 12.2.**

- b. All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner and shall commence in accordance with Section 9.8.d.
- c. When written warranties are specified, the document shall include the following information:
 - Name and address of Project and Owner;
 - Article, materials, or systems covered;
 - Name and address of Installer;
 - Name and address of Contractor; and
 - Signature of individual authorized to sign contracts for the company issuing the warranty.
- d. The following minimum warranty terms shall be incorporated:
 - .1 Duration shall be one year or as otherwise specified, dated from the Date of Substantial Completion;
 - .2 The article, material or system is free from defective materials and workmanship;
 - .3 Costs of repair or replacement shall not accrue to the Owner, including, without limitation, repair or replacement of other work disturbed by, or because of, repair or replacement; and
 - .4 The warranty period of two years, or as otherwise specified, shall recommence upon the identification and completion by Contractor and acceptance by Owner of any warranty claim during the initial two-year (2) warranty period.
- e. Warranties which are provided by a manufacturer for its product shall be received by the Contractor, filled out and filed with the manufacturer or other appropriate entity in coordination with the Owner. Certificates or registration stubs shall be included with the record documents submitted for the Owner upon completion of the Work. The Owner shall administrate manufacturer's warranties/guarantees after expiration of the Contractor's warranty.
- f. Temporary or trial usage by the Owner of any mechanical device, machinery, apparatus, equipment, or any work or material supplied under the Contract Documents before final completion and written acceptance by the Design Professional and Owner shall not be construed as evidence of the Design Professional's or the Owner's acceptance of same, or the commencement of any warranty periods.
- g. The Owner has the privilege of such temporary or trial usage, for such reasonable time as the Owner, or the Design Professional deem proper. The Contractor shall make no claims for damage or injury to, or breaking of, any parts of such work which may be caused by weakness or insufficiency of structural parts, or by defective materials or workmanship.
- h. The Contractor may, without cost to the Owner, make such trial usage. However, trials shall only be conducted with the Design Professional's prior approval and under its observation as may be required by either of them. Equipment and/or materials shall be replaced or returned to "as new" condition prior to acceptance by the Owner.

- i. The Contractor agrees to assign to the Owner at the time of final completion of the Work any and all manufacturer's warranties relating to materials and labor used in the Work and further agrees to perform the Work in such manner so as to preserve any and all such manufacturer's warranties.
- j. If necessary as a matter of law, the Contractor may retain the right to enforce directly any such manufacturers' warranties during the one (1) year period following the date of Substantial Completion described in Section 12.2.b.

Section 3.6 Taxes

The Contractor shall, to the extent not exempted under Section 13.11.i herein, pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect. In no event shall the Owner pay the Contractor for taxes that were not properly due or for which the Owner is exempt from paying under Texas law.

Section 3.7 Permits, Fees, Notices and Compliance with Laws

- a. Unless otherwise provided in the Contract Documents, the Owner shall secure and pay for the building permit. The Owner shall also pay for any applicable gas, water, sewer and electrical service application fees; assessments against the property, including property tax, developmental excise and similar taxes; sewer, water, and related utility tap fees; and sewer plant improvement fees, unless exempted under Texas law. The Contractor shall secure and pay for all other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.
- b. The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.
- c. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, regardless of whether such work is in accordance with Contract Documents, and without notice to the Design Professional that the Contract Documents are at variance with applicable laws, ordinances, rules, or regulations, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction. Codes and ordinances shall take full and complete precedence over anything contained in the Drawings, Specifications, or other Contract Documents, except where the Contract Documents call for Work or materials of higher standards than those required by codes or ordinances, in which case, the Contract Documents shall govern. Nothing contained in the Contract Documents shall be construed as authority for the Contractor to violate any applicable codes or ordinances in effect at the site.
- d. **Concealed or Unknown Conditions**
If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Design Professional before conditions are disturbed and in no event later than

seven (7) days after first observance of the conditions. The Design Professional will promptly investigate such conditions and, if, in the Design Professional's opinion, they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If, in the Design Professional's opinion, the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Design Professional shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Design Professional's recommendation, that party may submit a Claim as provided in Article 15.

- i. In no event shall any adjustment in the Contract Sum or Contract Time be made for conditions which should have been known to the Contractor or would have been noticed by a Contractor of similar size and experience pursuant to its on-site inspection; by way of or conditions referenced in any other inspections or tests concerning the site which have been made available to the Contractor or have been performed by the Contractor or its Subcontractors; are part of the Contract Documents; or are part of the materials provided by the Contractor to be used in constructing the improvements.
- e. If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Design Professional. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.
- f. The Contractor shall comply with all applicable laws, statutes, rules, codes, orders, regulations, and ordinances, including, but not limited to, all immigration, environmental and safety laws, statutes, rules, codes, orders and regulations.

.1 The Contractor shall also maintain at all times during the term of this Agreement (and for the time otherwise required by law) all records required by the United States Citizenship and Immigration Services ("USCIS"), including, without limitation, the completion and maintenance of the Form I-9 for each of Contractor's employees and shall respond at all times during the term of this Agreement in a timely fashion to any inspection request related to such I-9 forms by the Contractor, Owner or governmental agency or authority;

.2 Furthermore, during the term of this Agreement, and for the time otherwise required by law, Contractor shall cause its officers, directors, managers, agents, and employees to cooperate fully in all respects with any audit, inquiry, inspection, or investigation that may be conducted by the USCIS of the Contractor or any of its employees or subcontractors;

.3 The Contractor shall immediately, and in any event within two (2) hours of Contractor's first notice of an event described in this Section 3.7.f notify the Owner in writing and by in-person voice communications (not voicemail) of any unscheduled inspections, raids, investigations, inquiries, visits, or audits

conducted by the USCIS, OSHA, or any other governmental agency or authority related to environmental, immigration, or employee safety issues of the Contractor, its agents, employees, its Design Professional, Subcontractors, or Sub-subcontractors;

.4 The Contractor shall, on a monthly basis during the term of this Agreement, conduct an audit of the I-9 forms for its employees and shall promptly correct any defects or deficiencies that are identified as a result of such audit;

.5 The Owner may, at its sole discretion, terminate this Agreement immediately if, at any time during the term of this Agreement, the Contractor violates or is in breach of any provision of this Section 3.7.f or the USCIS determines that Contractor has not complied with any of the immigration laws, statutes, rules, codes, or regulations of the United States or any applicable state laws or regulations, or any applicable local ordinances, including, without limitation, the Immigration Reform and Control Act of 1986, as amended, and the Illegal Immigration Reform and Immigration Responsibility Act of 1996, as amended, and any successor statutes thereto;

.6 If an employee of the Contractor or if the Contractor is later determined to not have valid I-9 information then that employee shall be removed and barred from the Project site at the Contractor's expense; and

.7 The Contractor shall require the Subcontractors, Sub-subcontractors and material suppliers to make the representations and warranties set forth in this Section 3.7.f and to be bound by the same requirements set forth herein.

Section 3.8 Allowances

- a. The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.
- b. Unless otherwise provided in the Contract Documents,
 - .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
 - .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
 - .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.b.1 and (2) changes in Contractor's costs under Section 3.8.b.2.
- c. Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

Section 3.9 Superintendent

- a. The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work including, but not limited to, weekends, evenings and nights, or as otherwise reasonably and mutually agreed in writing with the Owner, until all punch list items have been completed to the satisfaction of the Design Professional. No subcontractor shall perform work on the site without the presence of the Superintendent or Assistant Superintendent. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.
- b. The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Design Professional of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Owner or the Design Professional may notify the Contractor, stating whether the Owner or the Design Professional (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Design Professional to provide notice within the 14-day period shall constitute notice of no reasonable objection.
- c. All of the Contractor's proposed on-site personnel must be approved by the Design Professional and Owner. The Contractor shall not employ a proposed superintendent to whom the Owner or Design Professional has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed. Substitution or other significant personnel changes which may affect the Contractor's on-site personnel must be preceded by written notification of the Design Professional and Owner no less than seven (7) business days before the anticipated event. Such proposed changes must be approved by the Design Professional and Owner. The Contractor shall designate a second person in charge in writing in the event the Superintendent is temporarily absent due to illness, vacation, or any other cause(s).

Section 3.10 Contractor's Construction and Submittal Schedules

- i. Where the Contract is based on a Stipulated Sum, the Contractor, immediately after being awarded the Work, and before execution of the Agreement, shall meet at a Preconstruction Conference with the Owner for the purpose of reviewing the Contractor's proposed Construction Management Plan; assisting the Owner with further developing the Master Project Schedule; and integrating the Work of the Contractor into that of the Owner and all Separate Contractors, if any.
- ii. The Contractor's Project Schedule must include all the following:
 - .1 Use precedence format, critical path method scheduling without the use of artificial activity constraints or "negative float";
 - .2 Use software, techniques and methods satisfactory to the Owner;
 - .3 Provide an electronic and graphic representation of all activities and events that will occur during performance of the Work;
 - .4 Identify each subproject, to include, without limitation preconstruction, construction, commissioning, turnover of the Work, and Owner's occupancy;
 - .5 Set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as "Contractual Milestone Dates");

.6 Upon review by the Design Professional and written review and acceptance by the Owner of the Contractual Milestone Dates, the Contractor's Project Schedule shall be deemed part of the Contract Documents and provided to the Owner as a submittal;

.7 If not accepted, the Contractor's Project Schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and resubmitted for acceptance;

.8 Submission of an updated Contractor's Project Schedule with each Application for Payment shall be a mandatory condition precedent to the payment by the Owner to the Contractor pursuant to an Application for Payment, and the Owner shall not be obligated to make payment if the Contractor fails to include an updated Contractor's Project Schedule reflecting the then-current conditions on the Project and the anticipated progress of Work based on those conditions; and

.9 All requests for change orders, modifications or additional compensation from the Contractor affecting the Contract Time or Contract Sum shall include a detailed schedule with both data and graphics showing the specific effect of the changed, modified or differing condition(s) on the critical path of the Contractor's Project Schedule.

- iii. The Contractor, prior to preparing the Construction Management Plan and attending the Preconstruction Conference, will have reviewed the sequences, durations, sequencing and dependencies of activities, material deliveries, and sequenced man-hour staffing to complete the Work. Work activities which have an installed value of twenty thousand dollars (\$20,000) or more will be broken down into major products or operations except where mutually agreed otherwise by Contractor and Owner, and these values cost-loaded into the Contractor's Project Schedule as deemed necessary by the Owner. Upon request by the Owner, the Contractor shall support values given for each work activity with data that will substantiate its correctness. The Owner may require the Contractor to show separate work activities and Contractual Milestones for, as examples only and without limitation: Substructure Completion; Superstructure Completion; Building Exterior Skin Completion; Interior Finishes Completion; Owner's Beneficial Occupancy, and other similar dates the Owner, at its sole discretion deems important to the Project.
- iv. In the event the Contractor does not timely provide the Contractor's Construction Management Plan with an acceptable Contractor's Project Schedule containing such elements, information, and processes in a form and with a level of detail acceptable to the Design Professional and the Owner, the Owner may, at the Owner's discretion, unilaterally generate the target Contractor's Project Schedule at the Contractor's expense, and impose such schedule, sequences, logic, and/or durations on the Contractor as it deems necessary to complete the Work, or the Owner may declare the Contractor in breach of contract. Whether or not the Owner decides to implement this option, all other contractual provisions relating to breach of contract will continue to be in full force and apply without modification. The Owner may deduct from the Contractor's Application(s) for Payment the amount paid by the Owner for generating the Contractor's Project Schedule.

- v. Upon completion of the Master Project Schedule, and acceptance by the Owner and all Separate Contractors, the Master Project Schedule shall supersede previously submitted schedules. Each updated Master Project Schedule shall supersede previous updates.
- b. The Contractor shall, at the Preconstruction Conference, and as a sub-system of its Contractor's Project Schedule, prepare an easily isolated, sorted and separately viewed submittal schedule, and thereafter update it as necessary to maintain a current submittal schedule, and shall submit such schedule(s) for the Design Professional's approval. The Design Professional's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's Construction Schedule, and (2) allow the Design Professional reasonable time to review submittals. If the Contractor fails to submit an approvable submittal schedule thirty (30) days prior to the date established for commencement of the Work, the Contractor shall not mobilize on site, or be entitled to any increase in Contract Sum or extension of Contract Time based on the delay of the Work or time required for review of submittals during the prosecution of the Work.
- c. The Contractor shall perform the Work in general accordance with the most recent Contractor's Project Schedules submitted to the Owner and Design Professional and incorporated into the approved Master Project Schedule.
- d. The Owner together with the Contractor, will monitor the Master Project Schedule, and incorporate the Contractor's updates to its portions of this overall schedule. As all Separate Contractors are also obligated to follow the Master Project Schedule and their respective schedules therein, they will be required to actively cooperate and participate in the preparation and updating of their portion of this schedule, as well as updating the overall Master Project Schedule by the Owner. The Contractor will be kept updated on all significant Master Project Schedule changes materially affecting the Contractor's Project Schedule.
- e. The Contractor will produce a Short Interval Schedule containing activities for not less than one (1) previous week and the next three (3) weeks, and which focuses on the major weekly work activities of each subsystem. At each weekly meeting this Short Interval Schedule will be reviewed by the Contractor with all affected Subcontractors and the Owner.
- f. In the event of substantial delay, if excusable under the Contract, for which extension of the Contract Time has or will be granted, the Owner will review and may require revision by the appropriate contractor(s) of affected component of the Master Project Schedule as required by the specific applicable situation(s), and with the cooperation of the Separate Contractors on the Project.
- g. The Contractor shall, at mutually agreed intervals, submit to the Owner and Design Professional a progress report stating, without limitation, labor forces mobilized and working on site; areas worked in or on; percent complete of current work activities; any potential schedule or coordination problems; material deliveries received; site visitors; and other information as required by the Owner.
- h. The Contractor shall monitor the progress of the Work for conformance with the requirements of the Contractor's Project Schedule and shall promptly advise the Owner of any delays or potential delays. The accepted Contractor's Project Schedule shall be updated to reflect actual conditions as frequently as mutually agreed by the Contractor and Owner; but in no event less frequently than with each Application for Payment; and at other times as may be reasonably requested by the Owner or Design Professional. In the event any progress report or schedule update indicates any

actual or potential delays, the Contractor shall, using both the most currently approved Contractor's Project Schedule as a baseline for comparison, and a written narrative, propose an affirmative plan to correct the delay (hereinafter referred to as the "Proposed Recovery Schedule") which must include the following:

- .1 The Proposed Recovery Schedule will show the results of working additional shift or days, adding additional labor, and any of the other actions specified in Section 8.4, if necessary, all as described in the accompanying narrative;
 - .2 The Proposed Recovery Schedule will be reviewed by the Owner, and the Contractor will promptly and diligently make all adjustments to the Proposed Recovery Schedule reasonably requested as a result of such review.
 - .3 The Proposed Recovery Schedule shall become the most current, approved Contractor's Project Schedule upon its approval by the Owner, issuance of a Change Order for the purpose by the Design Professional; and signing of such Change Order by the Contractor, Design Professional, and Owner, in that order; and
 - .4 In no event shall any progress report, schedule update or Proposed Recovery Schedule constitute an adjustment in the Contract Time, any Contractual Milestone Date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.
- i. In the event either the Owner or Design Professional determine that the performance of the Work, as of a Contractual Milestone Date, has not progressed or reached the level of completion required by the Contract Documents, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation those further specified in Section 8.4.
 - j. The Owner may exercise the rights furnished the Owner under or pursuant to this Section 3.10 and Section 8.4 as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with any Contractual Milestone Date or completion date set forth in the Contract Documents.
 - k. The Owner shall have the right to direct a postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with the operation of any part of the Owner's organization or any stakeholders or invitees thereof. The Contractor shall, upon the Owner's or Design Professional's request, reschedule such portion of the Work during hours when the interference to the Owner's organization, or any stakeholders or invitees thereof, will be minimized or eliminated. Any postponement, rescheduling, or performance of the Work under this Section 3.10.k may be grounds for an extension of the Contract Time, if permitted under Section 8.3.a; and an equitable adjustment in the Contract Sum if the performance of the Work was properly scheduled by the Contractor in compliance with the requirements of the Contract Documents; and to the extent such rescheduling or postponement is required for the convenience of the Owner.
 - l. Documents and Samples at the Site
The Contractor shall make available, to the Owner, Design Professional or their designees, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and

selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy and delivered to the Design Professional for submittal to the Owner upon completion of the Work as a record of the Work as constructed. The Contractor shall make available to the Owner or Design Professional for inspection and copying the record copy of the drawings, specifications, addenda, Change Orders and other Modifications, including all such documents maintained by the Contractor in electronic format, upon reasonable request of the Owner or Design Professional and, in any event, within twenty-four (24) hours of receipt by Contractor of a request from Owner or Design Professional for such review and/or copying. The Owner or Design Professional may request the record copy of the As-Built Documents, specifications, addenda, Change Orders and other modifications of the Work to be updated before Substantial Completion to reflect the most current condition of the Project, as additional Cost of the Work paid as a Change Order at the Owner's expense. The Owner or Design Professional may require the Contractor to furnish the As-Built Documents in electronic format and may make copies of them prior to completion of the Work at the Owner's expense.

- i. The Contractor shall provide final electronic files and one "hard" copy of the Drawings and Specifications to the Owner updated to reflect the final condition of the Project with the final Application for Payment as a condition precedent to final payment.

Section 3.12 Shop Drawings, Product Data and Samples

- a. Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.
- b. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- c. Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.
- d. Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Design Professional is subject to the limitations of Section 4.2.g. Informational submittals upon which the Design Professional is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Design Professional without action.
- e. The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Design Professional, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, after Contractor has verified the information contained within said submittals is in accordance with representations required by Section 3.12.f and in accordance with the submittal schedule approved by the Design Professional or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

- f. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Design Professional that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents and (4) verified the information contained within said submittals is in accordance with all applicable Federal, state and local codes or ordinances in effect at the site.
- g. The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Design Professional. Should the Contractor, Subcontractors, or Sub-subcontractors install, construct, erect or perform any portion of the Work without approval of any requisite submittal, the Contractor shall bear the costs, responsibility, and delay for removal, replacement, and/or correction of any and all items, material, and /or labor.
- h. The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Design Professional's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Design Professional of such deviation at the time of submittal and (1) the Design Professional has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Design Professional's approval thereof.
- i. The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Design Professional on previous submittals. In the absence of such notice, the Design Professional's approval of a resubmission shall not apply to such revisions.
 - i. Copies of all approved Shop Drawings, Product Data, Samples and similar submittals shall be preserved in an orderly manner and delivered by the Contractor to the Owner upon Final Completion.
- j. The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.
 - i. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor, the Owner and the Design Professional will specify all performance and design criteria that such services must satisfy in the Contract Documents. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional who shall comply with reasonable

requirements of the Owner regarding qualifications and insurance. 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 the Design Professional. The Owner and the Design Professional shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Design Professional have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.j, the Design Professional will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

- ii. If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Owner and the Design Professional at the time and in the form specified by the Design Professional.

Section 3.13 Use of Site, Delivery and Storage

- a. The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.
- b. The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Owner before using any portion of the site.
- c. The Contractor shall take reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to, all persons at the Project site; all property at the Project site; and all persons or property adjacent thereto, which includes, but is not limited to, the all the following duties and acknowledgments:

- .1 The Contractor acknowledges the Project site comprises and/or may be adjacent to existing structures and that these site areas may be occupied during the performance of some portions of this Contract;

- .2 The Work shall be performed, to the fullest extent reasonably possible, in such a manner that public areas adjacent to the site of the Work shall be free from all debris, building materials, and equipment likely to cause interference with adjacent stakeholders or create hazardous conditions;

- .3 The Contractor shall be responsible for the mitigation and/or abatement of all noise, dust, fumes, traffic or other by-product of construction activity that, in the opinion of the Owner or the Design Professional, have an adverse affect on the quality of life or productivity for Project stakeholders, the Owner's current operations, or the Owner's employees. Such mitigation and/or abatement shall be performed in manner and with a result completely and wholly acceptable to the Owner and Design Professional;

- .4 The Contractor shall control its personnel and the Subcontractors on site, especially regarding the use of alcohol or profanity, dressing in an inappropriate manner, parking in an inappropriate place, or other activities deemed to be inappropriate, to the satisfaction of the Owner and Design Professional. Repeat

offenses will cause the Owner or Design Professional to require, through the Contractor, the temporary or permanent removal of the offending individuals, Subcontractor(s) or Sub-subcontractor(s) from the site;

.5 The Contractor shall, at a minimum, secure the site by erecting and maintaining a 6'-0" chain link fence around the perimeter of the construction site. This fence shall remain intact until such time the site becomes secure in the opinion of the Contractor, as a result of construction progress (by way of example, and without limitation, completion of site grading and backfill, installation of doors and windows, etc.);

.6 The Contractor shall furnish and maintain sufficient sanitary facilities for its own forces and those of any Subcontractor or Sub-subcontractor. The facilities of any existing, nearby buildings will not be available for construction use; and

.7 The Contractor is advised that the project site area is subject to, among other inclement weather, unpredictable and high winds. When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all coverings and stored materials on site and fully protect the Work, as necessary, from injury or damage by any cause and to prevent possible damage caused by flying materials and debris.

- d. The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas, which includes, but is not limited to, all of the following duties:

.1 The access to the site shall be maintained in compliance with all local, state, and Federal code and life safety requirements for ingress by first responders and other similar emergency requirements;

.2 The Contractor shall inform the Owner, Design Professional and any officials referenced in Section 3.13.f in writing a minimum of thirty (30) calendar days prior to any disruption of access, specifically and graphically showing the nature of the disruption, as well as the hours it will be disrupted. Such disruption will be subject to Owner's and Design Professional's approval, such approval not to be unreasonably withheld;

.3 The Owner shall be responsible for snow removal to the limits of the construction site only so far that the Contractor will have access to the entrance to the construction area; and

.4 Snow removal within the limits of work and/or for the purpose of performing and protecting work by individual contractors is the duty of the Contractor.

- e. During the performance of the Work, the Contractor, its Subcontractors, Sub-subcontractors, suppliers and their employees agree they shall:

.1 Use such entrances to the construction site that may be designated by the Owner;

.2 Perform the Work at such times of the day and days of the week as may be designated by the Owner; and

.3 Accept that these entrances and times may be reviewed and changed from time to time by the Owner.

- f. The Contractor shall notify all public utility companies a minimum of two (2) business days prior to the commencement of any work by it or its Subcontractors in the vicinity of the utilities. No work shall commence until the utilities have been located and staked by the utility company or written consent from the Owner to proceed has been given to the Contractor. If the utility service must be interrupted, the Contractor shall, at Contractor's sole cost and expense, notify the head of the local administrative services (by way of example only, and without limitation, the city manager, the mayor, the city or county clerk, etc. as applicable) and the utility users affected by the interruption. Such notice shall consist of direct written communication, publication in a local newspaper, and/or announcement on local radio or television stations, whichever is most reasonably calculated to give the most effective notice to such utility users.
- g. The Contractor shall exercise due diligence in seeing that all equipment, material, and supplies are delivered in advance of the time they are needed on the job and shall properly store and protect same at the Contractor's expense.
- h. Notwithstanding any other provision herein, the Contractor shall take all necessary measures to store materials on site for which payment has been requested by the Contractor or been made by the Owner so that they shall not deteriorate, be damaged or be stolen, which includes, but is not limited to, all the following:
 - .1 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor;
 - .2 Protection of construction materials and equipment stored at the Project site from fire, weather, burglary, pilferage, vandalism and mischief, damage, and all other adversity; and the care and protection of materials and Work installed in the building is solely the responsibility of the Contractor;
 - .3 The Contractor shall bear sole responsibility for the restoration of damaged Work and replacement of damaged or stolen materials at no additional cost to the Owner; and
 - .4 After equipment is no longer required for the Work, it shall be promptly removed from the Project site.
- i. The Contractor shall not deliver any materials to the site which are not to be installed by same Contractor without fifteen (15) day's advance notice in writing to the Owner of the location, date, and time of such delivery to allow proper coordination. Such materials shall be received jointly by a representative of the Contractor and a representative of the Owner, who shall agree, and the Contractor shall document such agreement in writing:
 - .1 The materials delivered are undamaged, or if damaged, such damage is documented by digital photo(s);
 - .2 They are in the quantities shown on the purchase order, invoice or bill of lading accompanying the shipment or delivery or otherwise provided;
 - .3 The storage conditions are adequate for the purposes; and
 - .4 The Contractor has accepted responsibility for insurance and ongoing protection per Section 10.2 for such material until it is released to a third party authorized in writing by the Owner to receive it.

Section 3.14 Cutting and Patching

- a. The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.
- b. The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

Section 3.15 Cleaning Up

- a. The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract and shall be responsible for daily clean-up of construction materials and dust control. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project and shall clean all glass surfaces and leave the Work "broom clean", or its equivalent, except as otherwise specified.
- b. If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

Section 3.16 Access to Work

The Contractor shall provide the Owner and Design Professional and their representatives with access to the Work in preparation and progress at all times wherever located, and shall provide proper and safe facilities for such access.

Section 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall defend and hold the Owner and Design Professional harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Design Professional. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Design Professional.

Section 3.18 Indemnification

- a. **CONTRACTOR DOES HEREBY AGREE TO WAIVE ALL CLAIMS, RELEASE, INDEMNIFY, DEFEND AND HOLD HARMLESS INDEMNITEES FROM AND AGAINST ANY AND ALL CITATIONS, CLAIMS, COSTS, DAMAGES, DEMANDS, EXPENSES, FINES, JUDGMENTS, LIABILITY, LOSSES, PENALTIES, SUITS OR CAUSES OF ACTION OF EVERY KIND INCLUDING ALL EXPENSES OF LITIGATION AND/OR SETTLEMENT, COURT COSTS AND ATTORNEY FEES**

WHICH MAY ARISE BY REASON OF INJURY TO OR DEATH OF ANY PERSON OR FOR LOSS OF, DAMAGE TO, OR LOSS OF USE OF ANY PROPERTY OCCASIONED BY ERROR, OMISSION, OR NEGLIGENT ACT OF CONTRACTOR, ITS SUBCONTRACTORS, ANY OFFICERS, AGENTS OR EMPLOYEES OF CONTRACTOR OR ANY SUBCONTRACTORS, INVITEES, AND ANY OTHER THIRD PARTIES OR PERSONS FOR WHOM OR WHICH CONTRACTOR IS LEGALLY RESPONSIBLE, IN ANY WAY ARISING OUT OF, RELATING TO, RESULTING FROM, OR IN CONNECTION WITH THE PERFORMANCE OF THIS CONTRACT, AND CONTRACTOR WILL AT ITS OWN COST AND EXPENSE DEFEND AND PROTECT OWNER FROM ANY AND ALL SUCH CLAIMS AND DEMANDS.

CONTRACTOR DOES HEREBY AGREE TO WAIVE ALL CLAIMS, RELEASE, INDEMNIFY, DEFEND AND HOLD HARMLESS INDEMNITEES FROM AND AGAINST ANY AND ALL CITATIONS, CLAIMS, COSTS, DAMAGES, DEMANDS, EXPENSES, FINES, JUDGMENTS, LIABILITY, LOSSES, PENALTIES, SUITS OR CAUSES OF ACTION OF EVERY KIND INCLUDING ALL EXPENSES OF LITIGATION AND/OR SETTLEMENT, COURT COSTS AND ATTORNEY FEES FOR INJURY, SICKNESS, DISEASE OR DEATH OF ANY EMPLOYEE, AGENT OR REPRESENTATIVE OF CONTRACTOR OR ANY OF ITS SUBCONTRACTORS, REGARDLESS OF WHETHER THE CITATIONS, CLAIMS, COSTS, DAMAGES, DEMANDS, EXPENSES, FINES, JUDGMENTS, LIABILITY, LOSSES, PENALTIES, SUITS OR CAUSES OF ACTION ARISE IN WHOLE OR IN PART FROM THE NEGLIGENCE OF INDEMNITEES. IT IS THE EXPRESS INTENTION OF THE PARTIES HERETO THAT THE INDEMNITY PROVIDED FOR IN THIS PARAGRAPH IS AN INDEMNITY BY CONTRACTOR FOR THE BENEFIT OF THE OWNER FROM THE CONSEQUENCES OF OWNER'S NEGLIGENCE, WHETHER THAT NEGLIGENCE IS A SOLE OR CONCURRING CAUSE OF THE INJURY, SICKNESS, DISEASE OR DEATH OF CONTRACTOR'S EMPLOYEE OR EMPLOYEE OF ANY OF ITS SUBCONTRACTORS.

IN ANY AND ALL CLAIMS AGAINST ANY PARTY INDEMNIFIED HEREUNDER BY ANY EMPLOYEE OF THE CONTRACTOR, ANY SUB-CONTRACTOR, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, THE INDEMNIFICATION OBLIGATION HEREIN PROVIDED SHALL NOT BE LIMITED IN ANY WAY BY ANY LIMITATION ON THE AMOUNT OR TYPE OF DAMAGES, COMPENSATION OR BENEFITS PAYABLE BY OR FOR THE CONTRACTOR OR ANY SUB-CONTRACTOR UNDER WORKMEN'S COMPENSATION OR OTHER EMPLOYEE BENEFIT ACTS.

INDEMNIFIED ITEMS SHALL INCLUDE, BUT NOT BE LIMITED TO, ATTORNEYS' FEES AND COSTS, COURT COSTS AND SETTLEMENT COSTS, INCURRED BY AN INDEMNIFIED INDIVIDUAL OR ENTITY IN ATTEMPTING TO ENFORCE THIS INDEMNITY.

THE CONTRACTOR IS NOT REQUIRED TO INDEMNIFY OR DEFEND THE DESIGN PROFESSIONAL, ANY LICENSED ENGINEER, OR AN AGENT, SERVANT, OR EMPLOYEE OF THE DESIGN PROFESSIONAL OR LICENSED ENGINEER FROM LIABILITY THAT MAY ARISE FROM DEFECTS IN THE PLANS, DESIGNS OR SPECIFICATIONS OR NEGLIGENCE ON THE PART OF THE DESIGN PROFESSIONAL OR LICENSED ENGINEER IN THE RENDITION OR CONDUCT OF PROFESSIONAL DUTIES ARISING FROM THE CONTRACT AND THE PLANS DESIGNS OR SPECIFICATIONS THAT ARE PART OF THE CONSTRUCTION CONTRACT AS SET FORTH IN CHAPTER 130 OF THE TEXAS CIVIL PRACTICE AND REMEDIES CODE.

- b. THE CONTRACTOR'S INDEMNITY OBLIGATIONS UNDER THIS SECTION 3.18 SHALL ALSO SPECIFICALLY INCLUDE, WITHOUT LIMITATION, ALL FINES, PENALTIES, DAMAGES, LIABILITY, SAFETY VIOLATIONS, COSTS, EXPENSES (INCLUDING, WITHOUT LIMITATION, REASONABLE ATTORNEYS' FEES), AND PUNITIVE DAMAGES, IF ANY, ARISING OUT OF, OR IN CONNECTION WITH ANY:

.1 VIOLATION OF OR FAILURE COMPLY WITH ANY LAW, STATUTE, ORDINANCE, RULE, REGULATION, CODE OR REQUIREMENT OF A PUBLIC AUTHORITY THAT BEARS UPON THE PERFORMANCE OF THE WORK BY THE CONTRACTOR, A SUBCONTRACTOR OR ANY PERSON OR ENTITY FOR WHOM EITHER IS RESPONSIBLE;

.2 MEANS, PROCEDURES, TECHNIQUES, SAFETY PRECAUTIONS, OR SEQUENCES OF EXECUTION OR PERFORMANCE OF THE WORK; AND

.3 FAILURE TO SECURE AND PAY FOR PERMITS, FEES, APPROVALS, LICENSES, AND INSPECTION AS REQUIRED UNDER THE CONTRACT DOCUMENTS, OR ANY VIOLATION OF ANY PERMIT OR OTHER APPROVAL OF A PUBLIC AUTHORITY APPLICABLE TO THE WORK, BY THE CONTRACTOR, A SUBCONTRACTOR, OR ANY PERSON OR ENTITY FOR WHOM EITHER IS RESPONSIBLE.

- c. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS ALL OF THE INDEMNITEES SET OUT IN SECTION 3.18.a FROM AND AGAINST ANY COSTS AND EXPENSES (INCLUDING REASONABLE ATTORNEYS' FEES) INCURRED BY ANY OF THE INDEMNITEES IN ENFORCING ANY OF THE CONTRACTOR'S DEFENSE, INDEMNITY, AND HOLD-HARMLESS OBLIGATIONS UNDER THIS CONTRACT.

Article 4. DESIGN PROFESSIONAL

Section 4.1 General

- a. The Design Professional is the person or entity retained by the Owner pursuant to Section 2.3.b and identified as such in the Agreement.

- b. Duties, responsibilities, and limitations of authority of the Design Professional as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Design Professional. Consent shall not be unreasonably withheld.

Section 4.2 Administration of the Contract

- a. The Design Professional will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Design Professional issues the final Certificate for Payment. The Design Professional will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.
- b. The Design Professional will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, as the Work progresses and when fully completed, will be in accordance with the Contract Documents. However, the Design Professional will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Design Professional will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.a.
- c. On the basis of the site visits, the Design Professional will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Design Professional will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Design Professional will not have control over or charge of and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.
 - i. **NEITHER THE OWNER NOR THE DESIGN PROFESSIONAL NOR THE OWNER'S OTHER CONSULTANTS SHALL BE RESPONSIBLE OR LIABLE FOR THE SAFETY PROGRAM(S) DEVELOPED BY THE CONTRACTOR OR ITS SUBCONTRACTORS FOR THE SAFETY OF PERSONS AND PROPERTY, OR FOR COMPLIANCE WITH STATUTES, RULES, REGULATIONS, AND ORDERS APPLICABLE TO CONDUCT THE WORK. SHOULD ANY CONTRACTOR OR THEIR SUBCONTRACTOR(S), OR THE SUB-SUBCONTRACTOR(S) MAKE A CLAIM AGAINST THE INDEMNITEES, OR SHOULD THEY OR ANY GOVERNMENTAL ENTITY BRING ANY ACTION OR LEVY OR A FINE OR PENALTY AGAINST THE INDEMNITEES ON ACCOUNT OF ANY SAFETY-RELATED DAMAGE OR VIOLATION OF LAW ALLEGED TO HAVE BEEN SUSTAINED, THE CONTRACTOR AGREES THAT IT WILL HOLD THE INDEMNITEES HARMLESS AGAINST ANY SUCH VIOLATION, FINE, CLAIM OR SUIT, AND THAT IT WILL REIMBURSE THE INDEMNITEES THE COST OF DEFENDING SUCH SUIT,**

AND IF ANY JUDGMENT AGAINST THE INDEMNITEES ARISES THEREFROM, THE CONTRACTOR SHALL PAY OR SATISFY IT AND SHALL PAY ALL COSTS INCURRED BY THE INDEMNITEES.

d. Communications

The Owner and Contractor shall include the Design Professional in all communications about the Design Professional's services or professional responsibilities. The Owner shall promptly notify the Design Professional of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Design Professional's consultants shall be through the Design Professional. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

- i. Failure of Contractor to give the Owner or Design Professional written notice of Contractor's objections, within three (3) business days, to directives, instructions, interpretations, or minutes from the Owner or Design Professional, shall constitute final and conclusive consent on the part of the Contractor to such directives, instructions, interpretations, or minutes of the Owner or Design Professional.
 - ii. Any written notice from the Owner or Design Professional to the Contractor shall be sufficiently given when delivered to the last known business address of the Contractor, or to its registered or authorized agent, representative, or officer. Any written notice from the Contractor to the Owner shall be sufficiently given when personally delivered to the Owner's Office, Attn: Project Manager, or at such other address and to the attention of such person as the Owner may from time to time designate in writing.
- e. Based on the Design Professional's evaluations of the Contractor's Applications for Payment, the Design Professional will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.
- f. The Design Professional has authority to reject Work that does not conform to the Contract Documents. Whenever the Design Professional considers it necessary or advisable, the Design Professional will have the authority to require inspection or testing of the Work in accordance with Sections 13.4.b and 13.4.c, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Design Professional nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Design Professional to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.
- g. The Design Professional will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Design Professional's action will be taken in accordance with the submittal schedule approved by the Design Professional or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Design Professional's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor

as required by the Contract Documents. The Design Professional's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 1.2, 3.2.a, 3.3, 3.5, 3.12, and 13.9. The Design Professional's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Design Professional's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

- h. The Design Professional will prepare Change Orders and Construction Change Directives and may order minor changes in the Work as provided in Section 7.4. The Design Professional will investigate and make recommendations regarding concealed and unknown conditions as provided in Section 3.7.d.
- i. The Design Professional will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.
- j. If the Owner and Design Professional agree, the Design Professional will provide one or more Project representatives to assist in carrying out the Design Professional's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.
- k. The Design Professional will interpret matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Design Professional's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.
- l. Interpretations of the Design Professional will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations, the Design Professional will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.
- m. The Design Professional's opinions on matters relating to aesthetic effect will be considered by the Owner when making the Owner's determination on these issues and the Owner's decision will be final if consistent with the intent expressed in the Contract Documents. Such Owner's determination shall be communicated through the Design Professional.
- n. The Design Professional will review and respond to requests for information about the Contract Documents. The Design Professional's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Design Professional will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

Article 5. SUBCONTRACTORS

Section 5.1 Definitions

- a. A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.
- b. A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

Section 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

- a. Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Design Professional of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Design Professional may notify the Contractor whether the Owner or the Design Professional (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Design Professional to provide notice within the 14-day period shall constitute notice of no reasonable objection.
- b. The Contractor shall not contract with a proposed person or entity to whom the Owner or Design Professional has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.
- c. If the Owner or Design Professional has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Design Professional has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.
- d. The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Design Professional makes reasonable objection to such substitution.
- e. Upon request, the Contractor shall provide to the Owner an executed copy of all subcontracts, purchase orders, and other agreements relating to the Work.
- f. The Contractor shall not sublet the Work as a whole. The approval of subcontractors in no way relieves the Contractor from full responsibility.

Section 5.3 Subcontractual Relations

- a. By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including responsibility for safety of the Subcontractor's Work, which the Contractor, by the Contract Documents, assumes toward the Owner, the Owner's other consultants and Design

Professional. Each subcontract agreement shall preserve and protect the rights of the Owner, the Owner's other consultants, and Design Professional under the Contract Documents with respect to the Work to be performed by the Subcontractor. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available for review for each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors. Notwithstanding the above, all Agreements with the Owner shall have all references to compensation redacted before disclosing to Subcontractors, sub-Subcontractors, or any other tier of vendor.

- b. All subcontracts shall be in writing in form and substance substantially similar to the Contractor's standard form subcontract, attached to the Agreement and made a part thereof as an Exhibit, and shall specifically provide that the Owner is an intended third-party beneficiary of such subcontract. The Contractor's subcontractors, however, are not intended third-party beneficiaries of this Agreement by pass through, assignment, or otherwise, except as provided in the Contract Documents, and the Owner shall not be bound to Contractor's subcontract agreements.
- c. Whenever the Contractor receives payment pursuant to the Contract Documents, the Contractor shall make payments to each of its Subcontractors of any amounts actually received which were included in the Contractor's Application for Payment to the Owner for such subcontracts unless otherwise allowed to withhold payment by the terms and conditions of the subcontract or as allowed by law. The Contractor shall make such payments within ten (10) days of receipt of payment from the Owner in the same manner as the Owner is required to pay the Contractor under the Contract Documents if the Subcontractor is satisfactorily performing under its contract with the Contractor. Such payments from Owner to Contractor shall be imposed with an express trust to assure that payment is made to all Project Subcontractors, Sub-subcontractors, and suppliers. In addition to the express trust imposed upon such funds and the fiduciary duties incumbent upon the Contractor, Texas Property Code Chapter 162 shall apply.
- d. The Contractor shall monitor the Subcontractors, who shall pay all suppliers, Sub-subcontractors, laborers, and any other persons who provide goods, materials, labor, or equipment to the Subcontractor any amounts actually received which were included in the Subcontractor's request for payment to the Contractor for such persons, within ten (10) days of receipt of payment from the Contractor. The construction payments made by the Contractor to the Subcontractor shall be trust funds as set forth in Chapter 162 of the Texas Property Code. If the Subcontractor fails to make such payments in the required manner, the Subcontractor shall pay said suppliers, Sub-subcontractors, and laborers interest as set forth in Chapter 162 of the Texas Property Code.
- e. At the time the Subcontractor submits a request for payment to the Contractor, the Subcontractor shall also submit to the Contractor a list of the Subcontractor's suppliers, Sub-subcontractors, and laborers. The Contractor shall be relieved of the requirements of this Section regarding payment in ten (10) days and interest payments until the Subcontractor submits such list. If the Contractor fails to make timely payments to the Subcontractor as required by this Section, the Contractor shall pay the Subcontractor interest as calculated under the provisions of Chapter 2251 of the

Texas Government Code. Nothing in this Section 5.3 shall be construed to affect the retention provisions of any contract.

- f. The provisions of this Section 5.3 shall be made a part of each contract between the Contractor and each Subcontractor, either expressly or by incorporation by reference to this Section of the Contract Documents.

Section 5.4 Contingent Assignment of Subcontracts

- a. Each subcontract agreement for a portion of the Work may be assigned by the Contractor to the Owner, provided that
 - .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
 - .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

- b. If the Work in connection with a subcontract has been suspended for more than thirty (30) days, after termination of the Contract by the Owner pursuant to Section 14.2 and the Owner accepts assignment of such subcontract, the Subcontractor's compensation shall be equitably adjusted for any increase in direct verifiable costs incurred by such Subcontractor as a result of the suspension.
- c. Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity, including the performance bond Surety's takeover or completion contractor, which shall relieve the Owner of any legal responsibility under the subcontract.
- d. Each subcontract shall specifically provide that the Owner shall only be responsible to the Subcontractor for those obligations that accrue subsequent to the assignment of the Subcontractor to the Owner after suspension and termination of the Contract, as provided in this Section 5.4. This Section 5.4 shall be construed to prohibit a pass through or assignment of rights, unless authorized by the Owner in writing

Section 5.5 Owner Payments to Subcontractors

- a. In the event of any default hereunder by the Contractor, or in the event the Owner or Design Professional fails to approve any Application for Payment that is not the fault of a Subcontractor, the Owner may make direct payment to the Subcontractor, less appropriate retainage. In that event, the amount paid the Subcontractor shall be deducted from the payment to the Contractor.
- b. Nothing contained herein shall create any obligation on the part of the Owner to make any payments to any Subcontractor, and no payment by the Owner to any Subcontractor shall create any obligation to make any further payments to any Subcontractor.

Article 6. CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

Section 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

- a. The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.
- b. When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.
- c. The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.
- d. Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.
- e. The Contractor accepts assignment of, and liability for, all purchase orders and other agreements for procurement of materials and equipment that are listed in and identified as part of the Contract Documents. The Contractor shall be responsible for such pre-purchased items, if any, as if the Contractor were the original purchaser. The Contract Sum includes, without limitation, all costs and expenses in connection with delivery, storage, insurance, installation, and testing of items covered in any assigned purchase orders or agreements. All warranty and correction of the Work obligations under the Contract Documents shall also apply to any pre-purchased items, unless the Contract Documents specifically provide otherwise.

Section 6.2 Mutual Responsibility

- a. The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.
- b. If part of the Contractor's Work depends on proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Design Professional of any apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Design Professional of these apparent discrepancies or defects prior to

proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work.

- c. The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.
- d. The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.e.
- e. The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.
- f. Should the Contractor wrongfully delay or cause damage to the work or property of any Separate Contractor, the Contractor shall, upon due notice, promptly attempt to settle with such other contractor by agreement or otherwise to resolve the dispute. If such Separate Contractor sues or initiates a judicial proceeding against the Owner on account of any delay or damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor who shall defend such proceedings at the Contractor's expense. The Owner may fund the defense of such proceedings contemplated by this Section but, in any event, if any judgment or award against the Owner arises therefrom, the Contractor shall pay to satisfy it to the extent of Contractor's responsibility.
- g. **SHOULD ANY SUCH SEPARATE CONTRACTOR WRONGFULLY DELAYED OR DAMAGED BY THE CONTRACTOR OR PERSONS FOR WHOM THE CONTRACTOR IS RESPONSIBLE PER SECTION 6.2.f MAKE A CLAIM AGAINST THE INDEMNITEES, OR BRING ANY ACTION AGAINST THE INDEMNITEES, ON ACCOUNT OF THE DAMAGE ALLEGED TO HAVE BEEN SO SUSTAINED, THE CONTRACTOR SHALL HOLD THE INDEMNITEES HARMLESS AND DEFEND THEM AGAINST ANY SUCH CLAIM OR SUIT, AND SHALL REIMBURSE TO THE INDEMNITEES THE COST INCLUDING, WITHOUT LIMITATION, REASONABLE, ADDITIONAL ATTORNEY'S FEES INCURRED DEFENDING SUCH SUIT, AND IF ANY JUDGMENT AGAINST THE INDEMNITEES ARISES THERE FROM, THE CONTRACTOR SHALL PAY OR SATISFY IT AND SHALL PAY ALL COSTS INCURRED BY THE INDEMNITEES.**
- h. Should the Contractor be caused damage by any Owner's Separate Contractor(s)'s work, by reason of such Owner's Separate Contractor's failure to perform properly under its contract with the Owner, no action will lie against the Owner, and the Owner shall have no liability therefor, but the Contractor may assert its claims for damages directly against such Owner's Separate Contractor and the Owner shall reasonably assist the Contractor. by assign such rights to Contractor, unless otherwise prohibited under Texas law.
- i. Inasmuch as the completion of the building within the prescribed time is dependent very largely upon the close and active cooperation of all those engaged therein, it is, therefore expressly understood and agreed that each contractor shall lay out and install its work at such time(s) and in such manner as to not delay or interfere with the carrying forward of the work of the other contractors.

- j. Where the work of one contractor directly affects the conditions of the work of another contractor including, as examples only, and not limited to, providing shoring for backfilling, providing protective covering for painting, providing adequate bracing of door jambs, etc., the contractor performing the work which will adversely affect another contractor's work shall be responsible for providing adequate protection based upon methods used to perform its work.

Section 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, or the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Design Professional will allocate the cost among those responsible, which allocation shall be final.

Article 7. CHANGES IN THE WORK

Section 7.1 General

- a. Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.
- b. A Change Order shall be based upon agreement among the Owner, Contractor, and Design Professional. A Construction Change Directive requires agreement by the Owner and Design Professional and may or may not be agreed to by the Contractor. An order for a minor change in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time and reasonably inferable from the intent of the Contract Documents may be issued by the Design Professional alone.
- c. Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work. Except as permitted in Section 7.3 or as otherwise provided herein, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

Section 7.2 Change Orders

- a. A Change Order is a written instrument prepared by the Design Professional and signed by the Owner, Contractor, and Design Professional stating their agreement upon all of the following:
 - .1 The change in the Work;
 - .2 The amount of the adjustment, if any, in the Contract Sum; and
 - .3 The extent of the adjustment, if any, in the Contract Time.

- b. Methods used in determining adjustments to the Contract Sum may include those listed in Sections 7.3.c, 7.3.g and 7.3.j.
- c. Agreement on any Change Order constitutes a final settlement of all past and future claims, at law or in equity, concerning all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, delays, all direct and indirect costs, any claim for damages associated with such change, and any and all adjustments to the Contract Sum and the construction schedule.
- d. Change Orders Requiring City Council Approval
 The Contract Sum may not be increased because of a Change Order unless additional money for increased costs is appropriated for that purpose from available funds or is provided for by the authorization of the issuance of time warrants. The approval of the Denton City Council is required if a Change Order involves a decrease or an increase of \$50,000.01 or more. The original Contract Sum also may not be increased under this Section 7.2 by more than twenty-five percent (25.0%) over the entire duration of the Project. The original Contract Sum may not be increased by more than twenty-five percent (25%) over the entire duration of the Project for any reason; nor may it be decreased by more than twenty-five percent (25%) without the consent of the Contractor, as provided in Texas Local Government Code Sec. 252.048. After the Change Order is submitted by the Contractor under this Section 7.2, the additional time required to obtain City Council approval shall not be factored into any past or future claim for delays or calculated as a part of the Change Order request.

Section 7.3 Construction Change Directives

- a. A Construction Change Directive is a written order prepared by the Design Professional and signed by the Owner and Design Professional, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.
- b. A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.
- c. If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:
 - .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
 - .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
 - .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed fee; or
 - .4 As provided in Section 7.3.d.
- d. If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Design Professional shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit calculated using the sum of the actual costs allowed in Sections 7.3.d.1 through 7.3.d.5, and using the percentages as

set forth in Section 7.3.I below. In such case, and also under Section 7.3.c, the Contractor shall keep and present, in such form as the Design Professional may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.d shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Design Professional;
 - .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
 - .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
 - .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
 - .5 Additional, verifiable payroll and subsistence costs incurred by the Contractor, Subcontractor, and Sub-subcontractor of field personnel directly attributable to the change.
- e. If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.
- f. Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Design Professional of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.
- g. A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.
- h. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Design Professional. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.
- i. Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Design Professional will make an interim recommendation for purposes of monthly certification for payment for those costs and certify for payment the amount that the Design Professional recommends, in the Design Professional's professional judgment, to be reasonably justified. The Design Professional's interim recommendation of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.
- j. When the Owner and Contractor agree with a recommendation made by the Design Professional concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Design Professional will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

- k. If the Owner and Contractor do not agree with the adjustment in Contract Time or the method for determining it, the adjustment or the method shall be referred to the Design Professional for determination. The Design Professional may consult with the Owner in connection with such determination either at the direction of the Owner or at the Design Professional's discretion. If the Contractor does not ultimately agree with the Design Professional's determination, the Contractor may assert a Claim in accordance with Article 15.
- l. In Subparagraph 7.3.d, the allowance for the combined total of onsite and offsite overhead and profit included in the total cost to the Owner shall be based on the following schedule:
 - .1 For the Contractor, for Work performed by the Contractor's own forces, fee percentage of the Cost of Work stated in Section 5.1.a of the Stipulated Sum Agreement plus actual direct jobsite costs associated with the additional work, if any;
 - .2 For the Contractor, for Work performed by the Contractor's Subcontractor, fee percentage of the Cost of Work stated in the Stipulated Sum Agreement, if any, plus actual direct jobsite costs associated with the additional work, if any;
 - .3 For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor or Sub-subcontractor's own forces, ten percent (10%) of the cost;
 - .4 For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, five percent (5%) of the amount due the Sub-subcontractor;
 - .5 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.d;
 - .6 Under no circumstance shall costs of the Contractor's supervisory, management, administrative or other office personnel, regardless of where stationed, be paid as cost of the Work under 7.3.d Conversely, the Contractor shall be compensated for their labor within the overhead and profit percentage specified in this Section 7.3.1;
 - .7 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can immediately be seen by inspection, shall be accomplished by a complete itemization of costs including labor, materials, and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are subcontracts, they shall be itemized also;
 - .8 When both additions and credits are involved in any change, the allowance for overhead and profit shall be figured on the basis of the net increase or decrease, if any; and
 - .9 Overtime, when specifically authorized by the Owner and not as a requirement for the Contractor to fulfill its obligations under this Agreement, shall be paid for by the Owner on the basis of premium payment only, plus the cost of insurance and taxes based on the premium payment period. Overhead and profit will not be paid by the Owner for overtime.

Section 7.4 Minor Changes in the Work

The Design Professional may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Design Professional's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Design Professional and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Design Professional's order for a minor change without prior notice to the Design Professional that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

Section 7.5 Supporting Information

Notwithstanding the above, requests for an adjustment in the Contract Sum or adjustment in the Contract Time shall be in a form and accompanied by supporting information with a level of detail wholly acceptable to the Owner and Design Professional. The Contractor shall also comply with all provisions of Articles 8 and 15 with respect to claims. The required information shall be provided by the Contractor in less than twenty-one (21) days from the Contractor's request for an adjustment in the Contract Sum or Contract Time. Failure to timely provide this information in the proper form may be, in and of itself, grounds for rejection of the request, at the sole discretion of the Owner or Design Professional.

Article 8. TIME

Section 8.1 Definitions

- a. Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.
- b. The date of commencement of the Work is the date established in the Agreement. The date shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible.
- c. The date of Substantial Completion is the date certified by the Design Professional in accordance with Section 9.8.
- d. The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

Section 8.2 Progress and Completion

- a. Time limits stated in the Contract Documents are of the essence. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.
- b. The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by a Notice to Proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five (5) days or other agreed period before commencing the Work to permit the timely filing of any additional necessary documents.
- c. Attention is directed to the fact that the Work is urgently needed by the Owner; for this reason it shall be agreed that the Contractor will substantially complete all Work under the Contract within the time established in the Contract Documents and the most recently approved Contractor's

Project Schedule. The Contractor shall begin the Work on the date of commencement as defined in the Contract Documents; carry the Work forward with adequate resources; furnish, without limitation such labor, supervision, materials, facilities, and equipment; and work such hours, including night shifts, overtime operations, and Sundays and/or holidays, as may be necessary to ensure the progress and completion of both the Work and the Project as reflected by the most recently approved Contractor's Project Schedule.

- d. The Contractor shall achieve specific Contractual Milestone dates (if any), Substantial Completion, and Final Completion within the times stated in the Contract Documents, and such dates shall be adhered to and shall be the last acceptable dates for completion of Work required for those milestones and completions, unless and until modified by the Owner in writing.
- e. The Contractor understands and agrees that all Work must be performed in an orderly and closely coordinated sequence so that the dates for Contractual Milestones (if any), Substantial Completion, and Final Completion, may be met by the both the Contractor as well as the respective Separate Contractors.
- f. The Contractor shall also complete the Work in all of its details for final acceptance as expeditiously as possible after Substantial Completion.
- g. The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

Section 8.3 Delays and Extensions of Time

- a. If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Design Professional, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, implementation of Federal law or policies, unusual delay in transportation, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.f.ii, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation; or (5) by other causes that the Design Professional recommends may, justify delay, then the Contract Time may be extended for such reasonable time as the Owner may determine.
- b. Claims relating to time shall be made in accordance with applicable provisions of Article 15.
- c. This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.
- d. Any claims for extension of time shall be made in writing to the Owner and Design Professional not more than ten (10) days after commencement of the delay; otherwise it shall be waived. In the case of a continuing delay only one claim is necessary. The Contractor shall provide an estimate of the probable effect of such delay on the progress of work within five (5) days of the first date the Contractor should reasonably be expected to have calculated the impact of such delay, but in no event more than fifteen (15) days after the commencement of the delay, with weekly updates to the impact if the delay is of an ongoing nature.
- e. Extensions of the Contract Time will be made for delays due to weather conditions only when such conditions are more severe and extended than those reflected by the ten (10) year average for the month as evidenced by the National Climatic Data Center's (NCDC's) Surface Data US at <http://gis.ncdc.noaa.gov/website/ims-cdo/sod/viewer.htm> or other data as mutually agreed by the Owner and Contractor for the Project area.

- f. In allowing delays for weather, the Owner will be entitled to consider weather conditions prevailing throughout the entire Contract period. The Owner and Contractor will together reconcile actual working days lost and gained over the entire Contract period every ninety (90) days. The Contractor shall then adjust the schedule activities accordingly for both the Contractor's weather float reserves and Owner's float reserves where those activities are carried in the Contractor's Project Schedule (if any). Extensions of time due to weather or other allowable reasons will be granted on the basis of one-and-four-tenths (1.4) calendar days credit for every working day lost, with each separate extension figured to the nearest whole calendar day.
- g. The extension of the contract completion time for weather conditions will occur only in the event that the weather in question affected critical activities on the most current Contractor's Construction Schedule, and at least one half of the work force allocated to that item of work was also adversely affected by the same weather conditions.

Section 8.4 Contractor's Obligations After Delay

- a. If either the Work actually in place falls behind as reflected by the currently updated Master Project Schedule or Contractor's Construction Schedule, or it becomes apparent or likely in the reasonable opinion of the Owner after consultation with the Design Professional that the Work will not be completed within the Contract Time or in accordance with the Contractor's Construction Schedule, due to delays caused by the Contractor or its subcontractors, the Contractor agrees it shall, as necessary, take some or all of the following actions (hereinafter referred to collectively as "Extraordinary Measures") at no additional cost to the Owner or Design Professional, as required to substantially eliminate, in the judgment of the Owner, the backlog of Contractor's Work on the Project:
 - .1 Increase quantities of, without limitation, labor, supervision, material deliveries, equipment on site, and crafts as necessary;
 - .2 Increase the number of working hours per shift, shifts per working day, working days per week, or any combination of the foregoing;
 - .3 Reschedule activities to achieve maximum practical concurrence of accomplishment; and
 - .4 Do whatever else is reasonably required by the Owner or Design Professional.
- b. These Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the Contractor's Construction Schedule.
- c. In the event of a delay, the Owner Design Professional may also require the Contractor to immediately submit a Proposed Recovery Schedule as specified in Section 3.10.h above. If the Proposed Recovery Schedule is not satisfactory, the Design Professional may unilaterally establish a new Proposed Recovery Schedule acceptable to the Owner; issue it as a Construction Change Directive; and the Contractor shall comply therewith. The Owner may also require the Contractor to take any of the Extraordinary Measures to make up the lag in scheduled progress, all without additional cost to the Owner, or Design Professional.
- d. Failure of the Contractor to substantially comply with the requirements of this Section 8.4 shall be considered grounds for a determination by the Owner, after consultation with the Design

Professional, that the Contactor is in breach of this Agreement by failing to prosecute the Work and that of the Project so as to ensure its completion within both the Contract Time and the updated Contractor's Construction Schedule.

- e. Likewise, in the event the progress of the Project falls behind the predictions of the Master Project Schedule through no fault of the Contractor, the Owner or Design Professional may request, and the Contractor may agree to take one or more of the Extraordinary Measures, with the Owner bearing the cost for such measures by Change Order.
- f. The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Extraordinary Measures required by the Owner under or pursuant to this Section 8.4, except as specifically noted otherwise in Section 8.4.e.

Section 8.5 Owner's Rights After Delay

- a. In the event that any Contractor fails, or appears likely to fail, to complete a critical portion of Work on time or to complete a Contractual Milestone Date or completion date as evidenced by the most recently approved Contractor's Project Schedule, the Owner or the Design Professional shall have the right to impose any or all of the following options:
 - .1 Require the Contractor to substantiate the capability to get back on schedule within ten (10) business days;
 - .2 Require the Contractor to take some or all of the Extraordinary Measures, and do whatever else is required by the Owner or Design Professional until Contractor confirms, to the satisfaction of the Owner and Design Professional, the progress of the Work is in compliance and congruence with the most recently approved Contractor's Construction Schedule, such measures being at no extra cost to Owner and Design Professional;
 - .3 Withhold progress payment, or portions thereof, until such time as the Contractor is in compliance with the most recently approved Contractor's Project Schedule; and
 - .4 Contact or visit the factory, plant or distribution center whose production or delivery schedule may be critical to the scheduled completion of a portion of the contract work, and expedite same, at Contractor's expense.

Section 8.6 Liquidated Damages

- a. Should the Contractor fail to substantially complete the Work on, or before, the original date set forth in the Contract, or on or before the revised date as granted by extensions to Contract Time, the Owner may at its sole discretion permit the Contractor to proceed, and in such case, there shall be deducted from any monies due or which may become due the Contractor, a sum as specified herein, for each and every calendar day that the Work shall remain uncompleted. This sum shall be considered, not as penalty, but as the cost(s) for substantial losses suffered by the public and the Owner. Liquidated damages are intended to compensate the Owner for the Contractor's failure to meet the deadlines set forth herein, and shall not excuse the Contractor from liability from any other breach of requirements of the Contract Documents, including any failure of the Work to conform to applicable requirements. The Contractor agrees that the sums in Section 8.6.b are reasonable in light of the anticipated or actual harm caused by the breach, the difficulties of the proof of loss, and the inconvenience or nonfeasibility of otherwise obtaining an

adequate remedy. Contractor further acknowledges and agrees that Liquidated Damages may be owing even though no termination has occurred.

- b. Contractor shall pay as liquidated damages to the Owner: the sums shown in the table below for each calendar day that expires after the date set forth in the Contract for Final Completion of the Work.

First Week Late	Second Week Late	Third & Fourth Weeks Late	Every Day After the Fourth Week Late
\$1000/day	\$1000/day	\$1000/day	\$1500/day

- c. The parties acknowledge, covenant, and agree that the daily basis and the amount set forth above for liquidated damages are reasonable because of the unique nature of the Project as a benefit to the public; the fact that inconvenience to the public will be one of the significant impacts of any failure by the Contractor to timely complete the Work; and that it is impracticable and extremely difficult to ascertain and determine the actual losses which would accrue to the Owner and the public.
- d. Permitting the Contractor to continue and finish the Work, or any portion thereof, after the time fixed for its completion, shall in no way operate as a waiver on the part of the Owner of any of its rights under the Contract. The Contractor acknowledges the Owner receives no benefits from early completion of the Project or the Work, therefore all rights, if any, to an early completion bonus or other increases in the Contract Sum for such early completion are hereby waived by the Contractor.

Article 9. PAYMENTS AND COMPLETION

Section 9.1 Contract Sum

- a. The Contract Sum is stated in the Agreement and, is the maximum amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents. The Contract Sum may only be increased pursuant to a Change Order signed by the Owner. Completion of the Work is a condition precedent to Owner's obligation to pay the full Contract Sum.
- b. If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

Section 9.2 Schedule of Values

Where the Contract is based on a Stipulated Sum or the Cost of the Work, the Contractor shall meet with the Design Professional, at the Preconstruction Conference with a proposed Schedule of Values as specified in Section 3.10. The Contractor's Schedule of Values will be reviewed by the Owner and Design Professional in the context of the Contractor's proposed Construction Management Plan, including, but not limited to, the Contractor's Construction Schedule therein. The values assigned to each work activity in the Schedule of Values should be generated by the projected earned value of the activities in the Contractor's Construction Schedule, rounded to the nearest five dollars, and equal in aggregate to

the Contractor's and Subcontractor's contract amount(s). The Schedule of Values shall allocate the entire Contract Sum to the various portions of the Work and be prepared in such form and supported by such additional data to substantiate its accuracy as the Owner and Design Professional may require. This Schedule, of Values, unless objected to by the Owner or Design Professional, shall be used as a basis for reviewing the Contractor's Applications for Payment.

Section 9.3 Applications for Payment

- a. At least ten days before the date established for each progress payment, the Contractor shall submit to the Design Professional an itemized Application for Payment prepared in accordance with the Schedule of Values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Design Professional require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers and shall reflect retainage if provided for in the Contract Documents. The Application for Payment shall be notarized and include other documentation as reasonably required by the Owner; submitted electronically.
 - i. As provided in Section 7.3.i, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim recommendations of the Design Professional, but not yet included in Change Orders.
 - ii. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.
 - iii. Each Application for Payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and Design Professional and in compliance with all applicable statutes:
 - .1 A duly executed and acknowledged sworn statement showing all Subcontractors and material suppliers with whom the Contractor has entered into subcontracts, the amount of each such subcontract, the invoice from and the amount requested for any Subcontractor and material supplier in the requested Application for Payment, and the amount to be paid to the Contractor from such progress payment, together with similar sworn statements from all such Subcontractors and material suppliers;
 - .2 Duly executed statutory conditional waivers of mechanics' and material suppliers' lien for progress payments with each payment application; and appropriate statutory unconditional waivers of mechanics' and material suppliers' liens for progress payments; and appropriate statutory unconditional waivers for final payments from all Subcontractors and, when appropriate, from material suppliers and lower tier Sub-subcontractors establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or persons in any previous Application for Payment;
 - .3 An updated Contractor's Construction Schedule per Section 3.10 clearly showing the actual progress of the Work for each activity against the Work

previously scheduled to be completed during the period, and against targeted activities' previously approved completion dates; and

.4 With every Payment Request for the Work, contractor will submit an affidavit stating that the contractor has complied with the requirements of Chapter 2258, Texas Government Code. The parties hereto agree that any electronic copy of such affidavit shall be treated as an original for all intents and purposes;

.4 If required by the Owner's title insurer, if any, the Contractor shall execute a personal gap undertaking in form and substance satisfactory to such title insurer; and.

.5 Notwithstanding the above, Applications for Payment shall be in a form and accompanied by supporting information with a level of detail wholly acceptable to the Design Professional, and shall include, at a minimum, an updated monthly Contractor's Construction Schedule clearly and graphically comparing the actual "work-in-place" completed to the Work previously projected to be complete for the period. Failure to provide this information in the proper form may be, in and of itself, grounds for rejection of the Application for Payment, at the discretion of the Design Professional.

- b. Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the stored materials and equipment which must be properly tagged as to material and job identification; must be available for inspection by the Design Professional; and such requests for payment must be accompanied by documentary evidence as specified, without limitation, in Sections 3.13 and 11.3, which supports the request's validity; quantity and value of materials; proper material acceptance and storage; and including insurance on the materials as evidenced by a Certificate of Insurance or otherwise protects the Owner's interests. Such request shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site. Such materials shall be:

- .1 Protected from diversion, destruction, theft, and damage to the satisfaction of the Owner, and the Lender;

- .2 Specifically marked for use on the Project; and

- .3 Segregated from other materials at the storage facility.

- c. The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

- d. THE CONTRACTOR FURTHER EXPRESSLY UNDERTAKES TO DEFEND THE INDEMNITEES, AT THE CONTRACTOR'S SOLE EXPENSE, AGAINST ANY ACTIONS, LAWSUITS, OR PROCEEDINGS BROUGHT AGAINST THE INDEMNITEES AS A RESULT OF LIENS OR VERIFIED CLAIMS FILED AGAINST THE WORK, THE SITE OF ANY OF THE WORK, THE PROJECT SITE AND ANY IMPROVEMENTS THEREON, PAYMENTS DUE THE CONTRACTOR, THE PROJECT BOND OR ANY PORTION OF THE PROPERTY OF ANY OF THE INDEMNITEES (REFERRED TO COLLECTIVELY AS "LIENS OR VERIFIED CLAIMS" IN THIS SECTION 9.3.d). THE CONTRACTOR HEREBY AGREES TO INDEMNIFY AND HOLD THE INDEMNITEES HARMLESS AGAINST ANY SUCH LIENS OR VERIFIED CLAIMS AND AGREES TO PAY ANY JUDGMENT OR LIENS OR VERIFIED CLAIMS RESULTING FROM ANY SUCH ACTIONS, LAWSUITS, OR PROCEEDINGS.

Section 9.4 Certificates for Payment

- a. The Design Professional will, within seven (7) days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Design Professional recommends is properly due, and notify the Contractor and Owner of the Design Professional's reasons for withholding certification in part as provided in Section 9.5.a; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Design Professional's reason for withholding certification in whole as provided in Section 9.5.a.
- b. The issuance of a Certificate for Payment will constitute a representation by the Design Professional to the Owner, based on the Design Professional's evaluation of the Work and the data in the Application for Payment, that, to the best of the Design Professional's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Design Professional. However, the issuance of a Certificate for Payment will not be a representation that the Design Professional has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.
- c. Certification will be issued for ninety-five percent (95%) of the amount requested by the Contractor and approved by the Design Professional to be properly due until the Contractor is ninety-five percent (95%) completed with the Work. Thereafter, the accumulated retainage may be held without additional retainage, except that, should the Contractor at any time fail to keep current with the approved progress schedule, fail to assure payment to Subcontractors, Sub-

subcontractors and suppliers as required hereunder; or fail to promptly and diligently correct Work that does not comply with the Contract Documents, certification of ninety-five percent (95%) shall automatically again become effective and shall apply as long as the Contractor lags behind such progress or fails to assure such payment.

Section 9.5 Decisions to Withhold Certification

- a. The Design Professional may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Design Professional's opinion the representations to the Owner required by Section 9.4.b cannot be made. If the Design Professional is unable to certify payment in the amount of the Application, the Design Professional will notify the Contractor and Owner as provided in Section 9.4.a. If the Contractor and Design Professional cannot agree on a revised amount, the Design Professional will promptly issue a Certificate for Payment for the amount for which the Design Professional is able to make such representations to the Owner. The Design Professional may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Design Professional's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.b, because of any of the following:
 - .1 defective Work not remedied;
 - .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
 - .3 failure of the Contractor to make payments properly to Subcontractors, Sub-subcontractors and suppliers or for labor, materials or equipment;
 - .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
 - .5 damage to the Owner or a Separate Contractor;
 - .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
 - .7 repeated failure to carry out the Work in accordance with the Contract Documents;
 - .8 Contractor's failure to obtain necessary permits or licenses or to comply with applicable codes, regulations, or other laws;
 - .9 failure to fully execute the Contract with all associated documents as required;
 - .10 bond claims, or liens, filed for any portion of the Work; or
 - .11 failure of the Contractor to comply with any provisions of the Contract Documents, including without limitation Section 8.4.
- b. Omitted
- c. When the reasons for withholding certification are removed, certification will be made for amounts previously withheld less all associated damages, costs and expenses, suffered or accrued by the Owner or Design Professional. In the event the Design Professional nullifies a previously

issued Project Certificate for Payment, and the Owner has, prior to such nullification, paid thereon, the Contractor shall promptly reimburse to the Owner amounts the latter had previously paid pursuant to the nullified project Certificate for Payment. Alternately, the Owner may withhold payment in any subsequent Application for Payment, until and unless the reasons for nullification of the previously issued project Certificate for Payment have been remedied and all associated damages, costs, and expenses of Owner and Design Professional have been paid by the Contractor.

- d. If the Design Professional withholds certification for payment under Section 9.5.a.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Design Professional and the Contractor shall reflect such payment on its next Application for Payment.
- e. The Contractor shall not stop work or terminate the Contract if the Design Professional should refuse to issue any certificate because the Application for Payment does not conform with the requirements of Sections 9.3, 9.4, 9.5 or any other portion of these General Conditions, as supplemented herein.

Section 9.6 Progress Payments

- a. After the Design Professional has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Design Professional.
- b. The Contractor shall pay each Subcontractor, Sub-subcontractor and supplier, no later than ten (10) days after receipt of payment from the Owner the amount to which the Subcontractor, Sub-subcontractor and supplier is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's, Sub-subcontractor's and supplier's portion of the Work, unless otherwise allowed by the provisions of the subcontract or by law. The Contractor shall notify Owner in advance and in writing of any payment(s) to be withheld from any Subcontractor. The Contractor shall, by appropriate agreement with each Subcontractor, Sub-subcontractor and supplier, require each to make payments to their Sub-subcontractors and suppliers in a similar manner.
- c. The Design Professional will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Design Professional and Owner on account of portions of the Work done by such Subcontractor.
- d. The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven (7) days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Design Professional shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.
- e. The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.b, 9.6.c and 9.6.d.

- f. A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of any Work.
- g. The Contractor shall not withhold from any Subcontractor sums due the Subcontractor for completed Work which has been paid for by the Owner unless allowed by the terms and conditions of the subcontract as stated in Section 5.3.C of the Agreement or by law. The Contractor shall notify Owner in advance and in writing of any payment(s) to be withheld from any Subcontractor. Sums withheld by the Owner from the Contractor for deficiencies solely attributable to the Contractor shall not be grounds for the Contractor to withhold sums due to any Subcontractor. All sums paid to the Contractor for labor, materials, or equipment for the Work or Project shall be considered trust funds to be used by the Contractor for payment to those persons to the extent providing labor, materials and/or equipment incorporated into the Work or Project. Payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. However, notwithstanding the above, nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.
- h. **PROVIDED THE OWNER HAS FULFILLED ITS PAYMENT OBLIGATIONS UNDER THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL DEFEND AND INDEMNIFY THE OWNER FROM ALL LOSS, LIABILITY, DAMAGE OR EXPENSE, INCLUDING REASONABLE ATTORNEY'S FEES AND LITIGATION EXPENSES, ARISING OUT OF ANY LIEN CLAIM OR OTHER CLAIM FOR PAYMENT BY ANY SUBCONTRACTOR OR SUPPLIER OF ANY TIER. UPON RECEIPT OF NOTICE OF A LIEN CLAIM OR OTHER CLAIM FOR PAYMENT, THE OWNER SHALL NOTIFY THE CONTRACTOR. IF APPROVED BY THE APPLICABLE COURT, WHEN REQUIRED, THE CONTRACTOR MAY SUBSTITUTE A SURETY BOND FOR THE PROPERTY AGAINST WHICH THE LIEN OR OTHER CLAIM FOR PAYMENT HAS BEEN ASSERTED.**
- i. To the extent Contractor has received payment in accordance with the terms of this Agreement, the Contractor agrees to keep the Work and the site of the Project and all project bonds free and clear of all bond claim and verified claims related to labor and materials furnished in connection with the Work.
- j. If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or if the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective Work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, at the Owner's sole discretion, elect either to (i) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (ii) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

Section 9.7 Failure of Payment

If the Design Professional does not issue a Certificate for Payment, through no fault of the Contractor, within seven (7) days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within the date established in the Contract Documents, the amount certified by the Design Professional, then the Contractor may, upon seven (7) additional days' written notice to the Owner and Design Professional, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

Section 9.8 Substantial Completion

- a. "Substantial Completion" is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use, all major systems are operational, and all safety features are completed and Owner's receipt of written confirmation after final inspections by the applicable electrical, plumbing, fire department, health department, and other local and state officials having jurisdiction, stating the project is ready for occupancy by the Owner. In addition to the other requirements of the Contract Documents, and without limitation, the Contractor must also have obtained the written approval and issuance of any occupancy permits required by the laws of local government(s) and the State of Texas before the Contractor shall be deemed to have achieved Substantial Completion.
- b. When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Design Professional a comprehensive list of items to be completed or corrected prior to final payment. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The Contractor will also provide the Design Professional a comprehensive list of all claims previously and properly made in writing and identified by the Contractor as unsettled at the time of Substantial Completion.
- c. Upon receipt of the Contractor's list, the Design Professional will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Design Professional's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Design Professional. In such case, the Contractor shall then submit a request for another inspection by the Design Professional to determine Substantial Completion.
- d. When the Work or designated portion thereof is substantially complete, the Design Professional will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

- e. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.
- f. The Contractor's acceptance of payment per Section 9.8.e shall constitute a waiver for all purposes of all claims or causes of action by the Contractor against the Owner and the Design Professional, except those previously and properly made in writing and identified in the list provided by the Contractor as unsettled at the time of Substantial Completion per Sections 9.8.b.

Section 9.9 Partial Occupancy or Use

- a. The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, as such occupancy or use is consented to by the insurer and required under Section 11.3 provided it is authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Design Professional as provided under Section 9.8.b. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Owner.
- b. Immediately prior to such partial occupancy or use, the Owner, Contractor, and Design Professional shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.
- c. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

Section 9.10 Final Completion and Final Payment

- a. Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Design Professional will promptly make such inspection. When the Design Professional finds the Work acceptable under the Contract Documents and the Contract fully performed, the Design Professional will promptly issue a final Certificate for Payment stating that the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Design Professional's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.b as precedent to the Contractor's being entitled to final payment have been fulfilled. All warranties and guarantees required under Section 3.5 or otherwise required pursuant to the Contract Documents shall be assembled and delivered by the Contractor to the Design Professional as part of the final

Application for Payment. The final Certificate for Payment will not be issued by the Design Professional until all warranties and guarantees have been received and accepted by the Owner. "Final Completion" occurs when all the conditions of this Section and the Contract Documents are met as set forth herein.

- b. Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Design Professional and Owner; (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or Owner's property might be responsible or encumbered (less amounts withheld by the Owner) have been paid or otherwise satisfied; (2) a certificate evidencing that insurance required by the Contract Documents to remain in full force after final payment is currently in effect; (3) a written statement satisfactory to the Owner that the insurance will cover the period required by the Contract Documents; (4) consent of surety to final payment; (5) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract for Construction, to the extent and in such form as may be designated by the Owner and Owner's lender; (6) certification by the Contractor that (i) all Work has been completed in accordance with the Contract Documents, (ii) the final Application for Payment includes all claims of the Contractor against the Owner arising in connection with the Project and constitutes a waiver and release of any and all claims not presented in that application except for claims arising out of third party actions, cross-claims and counterclaims, and (iii) the Record Drawings maintained by the Contractor pursuant to the Contract Documents and delivered to the Owner or Design Professional are complete and accurate in all respects; and (7) evidence of compliance with all requirements of the Contract Documents, such as notices, certificates, affidavits, or other requirements to complete obligations under the Contract Documents, including, but not limited to, (i) instruction of the Owner's representatives in the operation of mechanical, electrical, plumbing, and other systems; (ii) delivery of keys to the Owner with keying schedule (master, submaster, and special keys); (iii) delivery to the Owner of the Contractor's warranties as set forth in the Contract Documents and each written warranty and assignment thereof prepared in duplicate, certificates of inspections, and bonds for the Design Professional's review and delivery to the Owner; (iv) delivery to the Owner of printed operating, servicing, maintenance and cleaning instructions for all Work (parts lists and special tools for mechanical and electrical work) in approved form; (v) delivery to the Owner of the Record Drawings; (vi) delivery to the Owner of a Final Waiver and Release of Liens covering all Work for itself and for each Subcontractor, vendor, and material supplier who furnished labor, materials, and services to the Work, executed by an authorized officer and duly notarized; (vii) delivery to the Owner of final waivers of lien from each subcontractor and material supplier who furnished labor, materials, and services to the Work, executed by their respective officers and duly notarized; and (viii) delivery of sales and use tax certificate number of the Contractor. In addition to the foregoing, all other submissions required by other Articles and Paragraphs of the Specifications and other Contract Documents shall be submitted to the Owner before approval of final payment. If a Subcontractor refuses to furnish a release or waiver required by the Owner and Owner's lender (if any), the Contractor may furnish a bond satisfactory to the Owner and Owner's lender (if any) to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the

Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and attorneys' fees.

- i. In addition to items listed in 9.10.b to be submitted before Final Payment will be made or remaining retainage released, Contractor shall deliver a permanent certificate of occupancy from local authorities having jurisdiction.
- c. If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Design Professional so confirms, the Owner shall, upon application by the Contractor and certification by the Design Professional, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Design Professional prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.
- d. The making of final payment shall constitute a waiver of Claims by the Owner except those arising from
 - .1 bond claims, Claims, liquidated damages, security interests, or encumbrances arising out of the Contract and unsettled;
 - .2 failure of the Work to comply with the requirements of the Contract Documents;
 - .3 terms of special warranties required by the Contract Documents;
 - .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment; or
 - .5 gross negligence, willful misconduct, or fraudulent concealment in connection with the performance of the Contract.
- e. Application for and acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee against the Owner or Design Professional except those previously made in writing and identified by that payee arising after the waiver given at Substantial Completion payment described in Sections 9.8.b and 9.8.f.
- f. In addition to any other damages, failure of the Contractor to achieve final completion within sixty (60) days after the specified date of Substantial Completion, subject to authorized extensions, will result in the Contractor being responsible for excess Design Professional's and other Owner's consultant(s)' fees beyond their original scope of services required to achieve final completion ("Excess Fees"). Excess Fees will be deducted from the amount due the Contractor.

Article 10. PROTECTION OF PERSONS AND PROPERTY

Section 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. Contractor's and all

Subcontractors' Safety Programs shall comply with all applicable requirements of the Occupational Safety and Health Act of 1970, and all other applicable state, local, or federal laws or regulations.

Section 10.2 Safety of Persons and Property

- a. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to all of the following:
 - .1 employees on the Work and other persons who may be affected thereby;
 - .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
 - .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.
- b. The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.
- c. The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards. The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the Project and improvements therein. Any damage to such property or improvements shall be promptly repaired by the Contractor.
- d. When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel, and the Contractor shall give the Owner and the Design Professional reasonable advance written notice of such planned activities.
- e. The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.a.2 and 10.2.a.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.a.2 and 10.2.a.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Design Professional or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.
- f. The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Design Professional.
- g. The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

h. Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

i. The Contractor shall immediately report in writing to the Owner and Design Professional all accidents arising out of or in connection with the Work that cause death, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injuries, or serious damages are caused, the accident shall be reported immediately electronically, as well as by telephone or messenger to the Owner and the Design Professional.

Section 10.3 Hazardous Materials and Substances

a. Hazardous materials include any material in such quantity, concentration, and physical or chemical characteristics including, but not limited to, ignitability or toxicity, so as to be capable of posing an unreasonable risk to health, safety and/or property if released into the atmosphere, transported, stored, or disposed of. The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Design Professional of the condition in writing.

.1 For the purposes of this section, the following terms have the below meanings (however, each definition should be read as broadly as possible to incorporate similar hazardous materials or substances:

Asbestos: any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

Petroleum: Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), and including but not limited to oil, fuel oil, oil sludge, oil refuse, gasoline, diesel fuel, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

Hazardous Waste: any solid waste listed as hazardous or which possesses one or more hazardous characteristics.

b. Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Design Professional the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or

substance. The Contractor and the Design Professional will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Design Professional has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Design Professional have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order duly processed and approved, the Contract Time shall be extended appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up, both as specified in Article 7. The term "rendered harmless" shall be interpreted to mean, without limitation that levels of hazardous materials, including, but not limited to, asbestos and polychlorinated biphenyls, are less than any applicable exposure standards set forth in OSHA regulations. In no event, however, shall the Owner have any responsibility for any substance or material that is brought to the Project site by the Contractor, any Subcontractor, any material supplier, or any entity for whom any of them is responsible. The Contractor agrees not to use any fill or other materials to be incorporated into the Work that are hazardous, toxic, or made up of any items that are hazardous or toxic.

- c. Omitted.
- d. The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.
- e. Omitted.
- f. **THE CONTRACTOR SHALL INDEMNIFY THE OWNER FOR THE COST AND EXPENSE THE OWNER INCURS (1) FOR REMEDIATION OF A MATERIAL OR SUBSTANCE THE CONTRACTOR BRINGS TO THE SITE AND NEGLIGENTLY HANDLES, OR (2) WHERE THE CONTRACTOR FAILS TO PERFORM ITS OBLIGATIONS UNDER SECTION 10.3.a, EXCEPT TO THE EXTENT THAT THE COST AND EXPENSE ARE DUE TO THE OWNER'S FAULT OR NEGLIGENCE.**

Section 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

Section 10.5 Site Visits

Anyone other than the Owner's designated representatives, the Design Professional, the Design Professional's consultants, and the Owner's other consultants visiting the job site who is not employed by a Contractor shall be required to register with the Contractor's site office before proceeding onto the job site.

Article 11. INSURANCE AND BONDS

Section 11.1 Contractor's Liability Insurance

- a. The Contractor shall purchase and maintain in a company or companies lawfully authorized to do business in Texas and as further qualified in Paragraph 11.6, such insurance as will protect the Contractor and the Indemnitees from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:
 - .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed; including private entities performing Work at the site and exempt from the coverage on account of number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;
 - .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees; or persons or entities exempt by statute from the requirements of Section 11.1.a.1, but required by the Contract Documents to provide the insurance required by that Section;
 - .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
 - .4 Claims for damages insured by usual personal injury liability coverage;
 - .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
 - .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle, including pollution clean-up if hauling hazardous materials; and
 - .7 Claims for bodily injury or property damage arising out of completed operations, which coverage shall be maintained for no less than ten (10) years following final payment.
 - .8 Claims for damages to the Work, and/or materials and equipment used/stored at the Work, as may be covered under any Builder's Risk insurance policy.
- b. The Contractor's Commercial General Liability Insurance should be written on ISO Form CG 00 01 10 01 or its equivalent and provide the following:
 - .1 Premises/operations (Including X-C-U coverages);
 - .2 Independent contractors;
 - .3 Products and completed operations with a per project aggregate limit, which coverage shall be maintained for a period of ten (10) years from the date of the Final Payment;
 - .4 Personal injury (libel, slander, false arrest) liability with employment exclusion deleted;

- .5 Blanket Contractual, including, but not limited to, a specified provision for the Contractor's obligations under Section 3.18 of the Contract Documents;
 - .6 Broad form property damage including, but not limited to, completed operations;
 - .7 Primary and Non-Contributory endorsement in favor of Indemnitees; and
 - .8 Contain a Waiver of Subrogation in favor of Indemnitees.
- c. Professional Errors and Omissions Liability Insurance is required for all licensed and certified professionals, including, but not limited to, contractors, engineers, Design Professionals, design-build and design professionals as follows:
 - .1 The retroactive date preceding the date of the contract; and
 - .2 An extended reporting period of three (3) years past substantial completion.
- d. Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.
- e. The Contractor shall, for the protection and benefit of the Indemnitees and the Contractor and as part of the Contractor's efforts to satisfy the obligations set forth in this Article 11, procure, pay for, and maintain in full force and effect, at all times during the performance of the Work until final acceptance of the Work; and for such duration as required in the Contract Documents; policies of insurance issued by a responsible carriers acceptable to the Owner, and in form and substance satisfactory to the Owner, that afford the coverages set forth in the Schedule of Insurance, attached to the Contract and made a part of it as Exhibit "YX" – Contractor's Insurance Certificate(s). All such insurance shall be written on an occurrence basis, with the sole exception of Professional Errors and Omissions Liability Insurance. In the event professional liability coverage is not available on "an occurrence" basis, a "claims made" basis policy with effective and retroactive dates prior to the effective date of the Contract Documents and an extended reporting period of at least three (3) years beyond Substantial Completion or as otherwise required by the Contract Documents, whichever is greater, may be substituted with the written consent and approval of the Owner and Design Professional. The Contractor's completed operations coverage shall be maintained until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.
- f. The Contractor agrees to deliver to the Design Professional, for transmittal to the Owner with a copy to the Design Professional within ten (10) days of the date of the Owner-Contractor Agreement and prior to bringing any equipment or personnel onto the site of the Work or the Project site, and thereafter upon renewal or replacement of each required policy of insurance, certified copies of all required insurance policies procured by the Contractor under or pursuant to this Article 11 or, with the written consent of the Owner and Design Professional, Certificates of

Insurance in form and substance satisfactory to the Owner and Design Professional evidencing the required coverages with limits not less than those specified in Section 11.1.k below and all endorsements as required in Article 11 herein. The coverage afforded under any insurance policy obtained under or pursuant to this Section 11.1 shall be primary to any valid and collectible insurance carried separately by any of the Indemnitees. Furthermore, all policies and Certificates of Insurance shall expressly provide that no less than thirty (30) days prior written notice (ten (10) days for non-payment of premium) shall be given the Design Professional and Owner in the event of material alteration, cancellation, nonrenewal or expiration of the coverage contained in such policy or evidenced by such certified copy or Certificate of Insurance. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.b and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.e. Information concerning reduction of coverage shall be furnished by the Contractor with reasonable promptness.

- g. Certificates of Insurance with the following or similar wording are not acceptable: "Failure to notify the certificate holder shall impose no obligation or liability of any kind upon the insurer, its agents or representatives."
- h. In no event shall any failure of the Design Professional to receive certified copies or certificates of policies required under Paragraph 11.1.f or to demand receipt of such certified copies or certificates prior to the Contractor's commencing the Work be construed as a waiver by the Owner of the Contractor's obligations to obtain insurance pursuant to this Article 11.
- i. When any required insurance, due to the attainment of normal expiration date or renewal date, shall expire, the Contractor shall furnish to the Design Professional Certificates of Insurance and amendatory riders or endorsements that clearly evidence the continuation of all coverage in the same manner, limits of protection, and scope of coverage as was provided by the previous policy forty-five (45) days prior to renewal date. In the event any renewal or replacement policy, for whatever reason obtained or required, is written by a carrier other than that with whom the coverage was previously placed, or the subsequent policy differ in any way from the previous policy, the Contractor shall also furnish the Design Professional with a certified copy of the renewal or replacement policy unless the Owner provide the Contractor with prior written consent to submit only a Certificate of Insurance for any such policy. All renewal and replacement policies shall be in form and substance satisfactory to the Owner and Design Professional and written by carriers acceptable to the Owner and Design Professional.
- j. Any Aggregate limit under the Contractor's liability insurance, shall by endorsement, apply to this Project separately.
- k. The Contractor shall notify the Owner and Design Professional in writing of any reduction in collectible limits (aggregate limits) by an amount in excess of Fifty Thousand Dollars (\$50,000), and the Contractor shall promptly procure, at no expense to the Owner, such additional coverage as necessary to restore the valid and collectible limits of such insurance to that required under the Contract Documents.
- l. The Contractor shall cause each Subcontractor to procure insurance congruent with the Contractor's insurance requirements as specified in the Contract Documents and satisfactory to the Owner and Design Professional and name each of the Indemnitees as additional insureds under the Subcontractor's commercial general liability, automobile and umbrella excess liability

- policies. The additional insured endorsement included on the Subcontractor's commercial general liability policy shall state that coverage is afforded the additional insureds with respect to claims arising out of all on-going and completed operations performed by or on behalf of the Contractor. Each policy shall contain a Waiver of Subrogation in favor of the Indemnities, provide for forty-five (45) day notice of cancellation or non-renewal, and be primary without contribution if the additional insureds have other insurance that is applicable to the loss. If the additional insureds have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the insurer's liability under this insurance policy shall not be reduced by the existence of such other insurance.
- m. The Indemnitees shall also be shown as "Additional Insureds" on the property, commercial general liability, automobile liability and umbrella (excess) liability policies and evidence of same must be included in Certificates of Insurance. Copies of policy endorsements must be provided listing the Indemnities as Additional Insureds, using ISO forms CG2010, CG2037, CA0070, CA0032 or their equivalents, and approved as to form by Owner.
 - n. A "waiver of subrogation" clause in favor of the Owner will be attached to the workers compensation, commercial general liability, umbrella (excess) liability, automobile and the any applicable property insurance policies and evidence of same must be included in Certificates of Insurance. Copies of policy endorsements must be provided showing waivers of subrogation in favor of the Indemnities using ISO forms CG2404, CA0070, CA0032, WC0003 or their equivalents, and approved as to form by Owner.
 - o. The Owner reserves the right to review the insurance requirements during the effective period of its Agreement with the Contractor, and provide a written request for the Contractor to make any reasonable and commercially available adjustments to insurance coverages and/or limits when deemed reasonably prudent by the Owner based upon its unilateral interpretation of changes in statutory law, court decisions or the Owner's potential increase in exposure to loss.
 - p. Neither Contractor, Subcontractor, Sub-subcontractor, nor any of their insurance carrier's liability obligations shall be limited to the minimum limits of coverage of insurance maintained or required to be maintained by the Contract Documents.

Section 11.2 Owner's Liability Insurance

- a. The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

Section 11.3 Property Insurance

- a. The Contractor shall purchase and maintain "builder's risk" property insurance, or comparable coverage, for the full replacement cost value thereof, for (i) the Work that is to be done, (ii) all insurable items of Work, title to which has been acquired by Owner in accordance with the Contract Documents and (iii) all materials to be incorporated in the Work, if such materials are in or upon the Premises, or in transit to Premises, whether or not title has been acquired by Owner. Such insurance shall not cover any property owned, leased, or otherwise used in connection with the Work by Contractor, Contractor's subcontractors or the agents or employees of them, that is not forming a permanent part of the Project. This insurance shall include the interests of Owner, Contractor, and Subcontractors and shall provide coverage against loss for "direct physical damage" (previously known as "all risk" coverage) including, but not limited to, without

duplication of coverage, fire, extended coverage, vandalism and malicious mischief, theft, collapse, earthquake, flood, sprinkler leakage, windstorm, testing and startup, temporary buildings and debris removal including demolition and increased cost of construction occasioned by enforcement of any applicable legal requirements.

- b. Any coverage related to the builder's risk property insurance maintained by Contractor for time including delay in opening and/or extra expenses shall inure to the benefit of Owner only. Owner shall be the only party insured under such policy, with the sole exception that the Contractor may be entitled to payment of its fee and general conditions associated with the reconstruction, less any deductible.
- c. The Contractor's insurance shall cover against loss for "direct physical damage" (previously known as "all risk" coverage) with sufficient limits to protect the full replacement cost value of the Work.
- d. If by the terms of the property insurance there is a deductible amount, in the event of a loss covered by such insurance, Contractor shall be responsible for all deductibles per occurrence which shall be considered a Cost of the Work for all insurable items of Work and materials to be incorporated in the Work, title to which has not been acquired by Owner in accordance with the Contract Documents. Except for Contractor's deductible risk, Owner is bearing all risk of loss to the Property for which Owner, Contractor, and others have an insurable or financial interest during construction, and, in the event of a loss to the property during construction, Owner agrees to rely solely to the proceeds of the Builder's Risk Insurance which Owner Contractor has agreed to furnish.
- e. To the extent permitted by law, Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other, and (2) Owner's Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section or other property insurance applicable to the Work. Owner or Contractor, as appropriate, shall require of Owner's Separate Contractors, if any, and the subcontractors, sub-subcontractors, agents, and employees of any of them, by written appropriate agreement, similar waivers each in favor of other parties enumerated herein.
- f. To the degree allowed by the insurer, Owner and Contractor shall each have its policies endorsed to provide for a waiver of the right of subrogation against the other respective party.
- g. Any loss insured pursuant to this Section 11.3 Property Insurance is to be adjusted by Owner and made payable to Owner as trustee for the insureds, as their interests may appear, subject to the requirements of any applicable mortgagee clause. Contractor shall pay each Subcontractor a just share of any insurance monies received by Contractor, and by appropriate written agreement, shall require each Subcontractor to make payments to its Sub-subcontractors in similar manner.
- h. Upon request, Owner shall make available for inspection by Contractor a copy of all policies to be furnished by Owner.

Section 11.4 Performance, Maintenance, and Payment Bond

- a. The Contractor must furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract. Such bonds shall be issued in an amount equal to the total Contract Sum by a surety company licensed in the state where the

Project is located, with a current A.M. Best rating of at least A- X, included on the U.S. Treasury Department's listing of approved sureties, and acceptable to the Owner and Design Professional, or as expressly agreed otherwise by the Owner and Design Professional in writing.

- .1 Except as otherwise required by statute, the form and substance of such bonds shall be satisfactory to the Owner in the Owner's sole judgment and shall satisfy the requirements Texas Government Code Chapters 2253 and 2269.
- .2 The Performance Bond, Maintenance Bond, and the Labor and Material Payment Bond shall each be in an amount equal to the Contract Sum and all subsequent increases.
- .3 Every Bond under this Section 11.4.a must display the Surety's Bond Number and a rider including the following provisions, which shall be attached to each Bond:
 - a) The Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change, or other modification of the Contract Documents;
 - b) Any addition, alteration, change, extension of time, or other modification of the Contract Documents, or a forbearance on the part of either the Owner or the Contractor to the other, shall not release the Surety of its obligations hereunder, and notice to the Surety of such matters is hereby waived; and
 - c) The Surety agrees that it is obligated under the bonds to any successor, grantee, or assignee of the Owner.
- b. Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.
- c. The Bond Form shall be in a form provided by the Owner.
- d. Additional Performance, Maintenance, and Payment Bonds may be recommended by the Design Professional and required by the Owner, at the Owner's sole discretion, from any Subcontractor. The Owner will pay such actual, additional expenditures as Cost of the Work using the process specified in Article 7 for Changes in the Work. All such bonds shall be in form and substance satisfactory to the Owner and Design Professional.
- e. The Contractor shall deliver the required bonds to the Owner no later than three (3) business days following the date of the Agreement is entered into, or if the Work is to be commenced prior to the date the Agreement is entered into, in response to a notification of award. The Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.
- f. The Contractor shall require the attorney-in-fact who executes the required bond on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

Section 11.5 Adjustment and Settlement of Insured Loss

- a. 11.5.1 Omitted.
- b. Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have fourteen (14) days from receipt of notice to object to the proposed settlement or

allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

Section 11.6 Insurance Companies

All insurance coverage procured by the Contractor shall be provided by insurance companies having current policyholder ratings no lower than "A- X" by A.M. Best and acceptable by the Owner and Design Professional, or as expressly agreed otherwise by the Owner, Contractor and Owner in writing. Such companies must be licensed to do business in the State of Texas.

Section 11.7 Failure to Purchase Insurance

If one or more of the Indemnitees, or the Contractor is damaged by the failure of either the Owner or the Contractor to purchase or maintain the insurance required under this Article 11, then the party who failed to purchase or maintain the insurance shall bear all reasonable costs (including attorneys' fees and court and settlement expenses) properly attributable to the failure.

Section 11.8 Insurance Limits Required

The following insurance limits are the minimums to be carried by the Design Professional, the Design Professional's consultants, the Owner's other consultants, the Contractor, and the Subcontractors, Sub-subcontractors, and suppliers, unless higher limits are required by their respective Agreements or Texas law (in which case those limits shall control):

- .1 Automobile Liability
\$1,000,000 Combined Single Limit
- .2 Commercial General Liability
\$1,000,000 Aggregate, Per Occurrence and Personal Injury
\$2,000,000 General Aggregate
\$2,000,000 Products/Completed Operations Aggregate
\$1,000,000 Personal and Advertising Injury
\$500,000 Fire Damage
\$5,000 Medical Payments
- .3 Worker's Compensation
Statutory Limits
\$1,000,000 Employers Liability
- .4 Umbrella or Excess Liability
\$10,000,000 Per Occurrence
- .5 Contractor's Environmental Impairment/Pollution coverage
\$1,000,000 Occurrence or Claim

\$2,000,000 Policy Aggregate

.6 Builder's Risk (where applicable)

100% of the total value of the work

- a. Limits for primary policies may differ from those shown when Umbrella or Excess Liability insurance is provided, as long as all coverage is equal to or greater than the minimum limits required herein.

Article 12. UNCOVERING AND CORRECTION OF WORK

Section 12.1 Uncovering of Work

- a. If a portion of the Work is covered contrary to the Design Professional's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Design Professional, be uncovered for the Design Professional's examination and be replaced at the Contractor's expense without change in the Contract Time.
- b. If a portion of the Work has been covered that the Design Professional has not specifically requested to examine prior to its being covered, the Design Professional may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

Section 12.2 Correction of Work

- a. Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Design Professional or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, specifically including but not limited to additional testing and inspections, the cost of uncovering and replacement; the cost of any additional supervision, material, labor, equipment, rental charges, home office overhead, and other expenditures necessitated to both rectify the non-complying conditions, protect adjacent Work of both the Contractor and the Project, and restore Work by the Contractor and others necessarily damaged in the course of rectifying the non-complying conditions; as well as compensation for the Design Professional's services and expenses made necessary thereby, shall be at the Contractor's expense.

- i. If prior to the date of Substantial Completion the Contractor, a Subcontractor, or anyone for whom either is responsible uses or damages any portion of the Work, including, without limitation, mechanical, electrical, plumbing, and other building systems, machinery, equipment, or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner. In addition, the Contractor shall promptly remedy damage and loss arising in conjunction with the Project caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, supplier, or anyone directly or indirectly employed by any of them, or anyone for whose acts they may be liable or for which the Contractor is otherwise responsible.

- b. After Substantial Completion
 - i. In addition to the Contractor's obligations under Section 3.5, if, within two years after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.a, or by terms of any applicable special warranty required by the Contract Documents, or within such longer period of time as may be prescribed by law, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. If the condition is reasonably discoverable, during the two-year period for correction of Work, and the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Design Professional, the Owner may correct it in accordance with Section 2.5, and charge the reasonable costs to the Contractor.
 - ii. The two-year period for correction of Work shall also be extended by the period of time between Substantial Completion and the actual completion of the corrective Work performed by the Contractor pursuant to this Section 12.2, but only with respect to the corrected portions of the Work.
 - iii. Omitted.
- c. Omitted.
- d. The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents. These costs specifically include, but are not limited to such additional supervision, material, labor, equipment rental charges, home office overhead, and other expenditures necessitated to rectify the non-complying conditions, protect adjacent Work, and restore Work by the Contractor and others necessarily damaged in the course of rectifying the non-complying conditions.
- e. Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.b relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.
- f. The Contractor's obligations under this Section 12.2 shall, without limitation, survive acceptance of the Work under the Contract and termination of the Contract.

Section 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made. In the event final payment has been made by the Owner subsequent to accepting such non-conforming Work, the Contractor shall pay the Owner for the reduction in the Contract Sum occasioned by such acceptance.

Article 13. MISCELLANEOUS PROVISIONS

Section 13.1 Governing Law

The Contract shall be governed by the laws of the state of Texas. Venue on any dispute arising out of this Contract shall be in Denton County, Texas, which is the place where the Project is located and where performance is primarily to occur.

Section 13.2 Successors and Assigns

- a. The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.b, neither party to the Contract shall assign the Contract, or any rights under the contract, in whole or in part without the written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.
- b. The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.
- c. Written Notice
Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

Section 13.3 Rights and Remedies

- a. Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.
- b. No action or failure to act by the Owner, Design Professional, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

Section 13.4 Quality Management Tests and Inspections

- a. Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or

lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Design Professional timely notice of when and where tests and inspections are to be made so that the Design Professional may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require. As required by the provisions of Texas Government Code, Section 2269.058(a), the Owner shall provide or contract for the construction materials engineering, testing, and inspection services and the verification testing services necessary for acceptance of the facility by the Owner. To the extent that any of the provisions of this Section 13.4 or other provisions of this Agreement conflict with any of the provisions of Section 2269.058(a) such conflict is unintentional, and the provisions of the Texas Government Code shall control.

- b. If the Design Professional, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.a, the Design Professional will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Design Professional of when and where tests and inspections are to be made so that the Design Professional may be present for such procedures. Such costs, except as provided in Section 13.4.c, shall be at the Owner's expense.
- c. If such procedures for testing, inspection, or approval under Sections 13.4.a and 13.4.b reveal failure of the portions of the Work to comply with requirements established by the Contract Documents ("Failed Work"), all costs made necessary by the Failed Work, including those of repeated procedures and compensation for the Design Professional's services and expenses and all costs specified in Section 12.2 shall be at the Contractor's expense. The Contractor also agrees all costs of testing, inspection, and approval services required for the correction of the Failed Work and the cost of such similar services related to remedial operations performed to the Failed Work shall be borne by the Contractor.
- d. Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Design Professional.
- e. If the Design Professional is to observe tests, inspections, or approvals required by the Contract Documents, the Design Professional will do so promptly and, where practicable, at the normal place of testing.
- f. It is the intent of the Construction Documents to require the Contractor to control the quality of the Work using the processes specified in the Contractor's Quality Management, Commissioning, and Turnover Plan contained within the most recent Construction Management Plan approved by the Owner and Design Professional. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work and shall conform to the most recently approved Contractor's Construction Schedule.

- g. The responsibility for implementing the Quality Management, Commissioning and Turnover Plan is the Contractor's, as is the obligation to provide the Work and a complete and functional project per the Contract Documents. Notwithstanding anything herein, or in subsequently approved Quality Management, Commissioning and Turnover Plans, the Owner's review and Design Professional's approval of such plan(s) does not relieve the Contractor in any way of this responsibility.
- h. The Contractor shall be in charge of scheduling; re-scheduling (when required); and confirming adequate distribution of reports and other findings from all testing and inspections of the Work. This responsibility includes, but is not limited to, scheduling the testing services of a certified testing laboratory which, by statute shall be contracted to and paid for by the Owner. The certified testing laboratory shall be acceptable to the Design Professional; and shall perform the tests as called for in the Contract Documents. The conditions that apply to materials testing and inspections include, but are not limited to the following:
 - .1 The frequency and type of Quality Control testing shall be established by the Contractor and shall be sufficient to insure the delivery of the Work and a complete and functional project per the Contract Documents. The type and amount of testing required by the Contract Documents shall be seen as the minimums required, and shall be increased, if in the opinion of the Contractor, more testing is needed to meet the requirements of the Contractor.
 - .2 The Contractor shall concurrently provide the Design Professional copies of all test results it receives within three (3) business days of receipt of same.
 - .3 The Owner shall provide such Quality Assurance testing as it and the Design Professional mutually agree to be adequate for their own needs. The Owner shall distribute the results of its own Quality Assurance tests as it, at its sole discretion, deems appropriate. The provision of Quality Assurance testing by the Owner, or lack thereof shall in no manner affect the responsibilities of the Contractor or Design Professional under this Agreement.
- i. The Contractor shall facilitate and conduct weekly (or more frequent if necessary) meetings on site for the coordination of all mechanical, electrical and special systems installation activities and possible interference(s) above ceilings, in mechanical rooms, etc. The mechanical trades shall typically have preference in the event of conflicts, and therefore the mechanical contractor's coordinator will usually lead each meeting, unless the Contractor decides another trade or the Contractor should take the lead. The Design Professional shall be informed of the meetings at least seven (7) days in advance, and the appropriate Design Professional's consultants should be invited to attend by the Contractor, as supplemented and coordinated by the Design Professional.
- j. The Contractor's Quality Management, Commissioning and Turnover Plan shall specify that prior to completion and acceptance of any building system or phase, consistent with the Contract and applicable codes and Contractor will review, in detail, the steps for completing testing of all building systems with the Owner and Design Professional. This plan shall be coordinated with and shall be made part of the Contractor's Construction Schedule. All testing shall be of each complete system, before covering, or of individually separable larger portions of each system and shall be performed in the presence of the appropriate Owner's and Design Professional's consultant(s), representatives of the Owner, and at its option, either or both the Design Professional.

- k. When heating, air conditioning, ventilating, exhaust, or other items of mechanical, electrical or other similar equipment are installed, or other systems or equipment requiring testing as may be specified in the Contractor's Quality Management, Commissioning and Turnover Plan, it shall be the responsibility of the Contractor, Subcontractor or Sub-subcontractor installing such equipment to operate it for a period of time satisfactory to the Owner prior to acceptance and before the start of Warranty. The duration of such operation shall be as the Owner, Owner's consultant(s), Design Professional's consultant(s), Owner's employees and other Owner's representatives (the Turnover Team) shall reasonably require for proper testing of the respective system and thorough instruction of the Owner's operating personnel.
- l. All equipment, testing instruments, instruction materials and incidentals required for proper testing of such systems and thorough instruction of the Owner's operating personnel on each system's operations and maintenance shall be provided by the Contractor, Subcontractor or Sub-subcontractor responsible for providing and installing the equipment. Such tests and instruction shall be in meetings held solely for this purpose (the Turnover Meetings), which shall be coordinated and managed by the Contractor, who shall show their dates in the Contractor's Construction Schedule at least sixty (60) days prior to occurrence. The Contractor shall schedule the Turnover Meetings at times reasonably convenient for the Owner's consultant(s), Design Professional's consultant(s), Owner's employees and other Owner's representatives that the Owner and Design Professional agree are necessary to attend for each system. The Design Professional may attend such Turnover Meetings at its discretion.
- m. The Contractor shall provide a digital video record to the Owner, with copies to the Design Professional of all meetings for the purpose of Owner operational staff instruction or training; as well as commissioning of equipment. These videos will become a permanent part of all Operations and Maintenance manuals as applicable.
- n. The Contractor shall prepare a digital video record of the project for the Owner with copies to the Design Professional at such stages as shall be indicated by the Design Professional for the purpose of documenting the location of piping, conduit, equipment, or other construction to be concealed at a later date; recording key inspections and tests; providing evidence of unforeseeable conditions encountered by the Contractor on site; and other construction issues as the Design Professional may reasonably require from time to time.
- o. The Contractor shall layout and mark any plantings, shrubs and trees which will require removal a minimum of five (5) business days prior to their removal. The Contractor shall notify the Design Professional in writing immediately upon completion of this marking, and the Design Professional will have the location of these marked plantings, shrubs and trees reviewed and approved (if correct) by the Owner. The Design Professional will then give permission for removal in writing to the Contractor. Plantings, shrubs, and trees shall not be removed or damaged without such permission.

Section 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest as set forth in the provisions of Texas Government Code, Chapter 2251 or its successor statute.

Section 13.6 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than ten (10) years after the date of Substantial Completion of the Work.

Section 13.8 Measurement

Before ordering any material or doing any Work, the Contractor shall verify all measurements for Work completed at the Project and shall be responsible for their accuracy. Any differences found shall be submitted to the Design Professional for consideration before proceeding with the Work. The Contractor shall use its utmost efforts to identify discrepancies in dimensions in a timely fashion and notify the Owner and Design Professional of these prior to commencing any Work affected by the ambiguous dimensions. No extra charge or compensation shall be allowed because of differences between actual measurements and the dimensions indicated on the drawings.

Section 13.9 Expediting Materials

The Contractor shall immediately, after receipt of Notice to Proceed and approval of the list of subcontractors and material suppliers, place orders for all equipment, materials, and supplies required for the Work, and shall submit to the Design Professional evidence that such orders have been placed in accordance with the Contractor's Construction Schedule.

Section 13.10 Addressing the Owner's Additional Needs and Concerns

- a. Notwithstanding the above, the Owner has a unique set of stakeholders and organizational structure that creates special challenges the Contractor must completely and successfully address to the satisfaction of the Owner and Design Professional in the performance of the Work under this Agreement. The actions that shall be taken to address these special challenges include, but are not limited to, the following:

- .1 The Contractor shall provide the Superintendent once per month for a scheduled meeting with the Owner for a progress update on the project if requested by the Owner. A walk-through of the site may be held as a part of this meeting, which shall be scheduled by mutual agreement during regular business hours.

- .2 The Contractor may be required to provide the Superintendent for one meeting per month with the Design Professional for the purpose of assisting the Owner in preparing City Council agenda items and assisting City staff in preparing presentations to the City Council for the benefit of the public. The actual preparation and submission of the City Council of any agenda or work session item shall be performed by the Owner.

- .3 In addition to the meetings required to complete the Project, it is anticipated the Owner may request tours from time to time of the project and the site. The Contractor shall indicate in writing when such activity will be permitted and when the site is off limits. These requirements shall be coordinated through the Owner.

Section 13.11 Additional Provisions

- a. In the event that any provision herein is held to be unlawful, against public policy, or a violation of the Charter or Ordinances of the Denton City, Texas, such provision shall be modified to make it valid, or if modification is not possible, such provision shall be deleted and the remainder of this Agreement shall remain in full force and effect.
- b. Each party hereto agrees to, without limitation, perform all acts; provide all services, material, equipment, labor and supervision; and to make, execute, and deliver such written instruments, as shall from time to time be reasonably required to carry out the terms and provisions of the Contract Documents.
- c. All exhibits referred to in the Contract Documents are, by reference, incorporated herein for all purposes.
- d. The captions of the paragraphs are set forth only for convenience and reference, and are not intended in any way to define, limit, or describe the scope or intent of the Contract Documents.
- e. Any specific requirement in this Contract that require responsibilities or obligations of the Contractor also apply to a Subcontractor is added for emphasis and is also hereby deemed to include a Subcontractor, Sub-subcontractor or supplier of any tier. The omission of a reference to a Subcontractor in connection with any of the Contractor's responsibilities or obligations shall not be construed to diminish, abrogate, or limit any responsibilities or obligations of a Subcontractor, Sub-subcontractor or supplier of any tier under the Contract Documents or the applicable subcontract.
- f. The provisions of the Contract Documents shall not be changed, amended, waived, or otherwise modified in any respect except by a written document signed by Owner. No person is authorized on behalf of Owner to orally change, amend, waive, or otherwise modify the terms of the Contract Documents or any of the Contractor's duties or obligations under or arising out of the Contract Documents. Any change, waiver, approval, or consent granted to the Contractor shall be limited to the specific material restated in the written document signed by Owner and shall not relieve Contractor of any other of the duties and obligations under the Contract Documents.
- g. The Contractor shall provide and file, as required by law, all notices required or permitted by the laws of the state in which the Project is located for protection of Owner from liens and claims of lien if permitted or required by applicable law. Contractor shall be responsible for filing in the appropriate court or other governmental office records all such notices as required or permitted by the laws of the state in which the Project is located.
- h. The Contractor shall provide Owner with copies of all notices received by Contractor from Subcontractors, Sub-subcontractors, and/or suppliers to Contractor.
- i. The Owner is a Texas home-rule municipality and as such is generally exempt from taxation under Texas law, which may include the purchase of items, materials, or supplies purchased on behalf of the Owner for this public works project. Contractor shall confirm that the Owner is exempt before paying taxes for items, materials, or supplies that may not be lawfully charged to the Owner.
- j. Owner affirmatively represents that its governing body has duly appropriated such sums which are equal to or in excess of the contract amount, and that such contract amount may be lawfully paid by Owner to Contractor subject to the terms and conditions of the Contract Documents. In the event that Owner approves a Change Order, Construction Change Directive or other additional compensable Work to be performed by Contractor, (other than that contemplated by

- the Contract Documents under any remedy-granting provision), Owner will issue a written assurance at the time of such approval that such additional compensation to be paid has also been duly appropriated by the Owner's governing body.
- k. In the event the Owner is required to further advertise the completion of the Work or the Project under any local, state or Federal law, the Contractor shall notify the Owner and Design Professional of such requirement(s) in writing not less than thirty (30) days in advance and attach a copy of the specific advertising and noticing required.
 - l. The Contractor shall, in addition to compliance with the requirements of Section 3.7.f and without limitation, not knowingly employ or contract with an illegal alien to perform any of the Work under this Agreement. The Contractor shall not knowingly contract with a Subcontractor that (i) knowingly employs or contracts with an illegal alien to perform work under this Agreement or (ii) fails to certify to the Contractor that the Subcontractor will not knowingly employ or contract with an illegal alien to perform work under this Agreement.
 - i. The Contractor shall comply with any reasonable request of the Texas Workforce Commission made in the course of an investigation pursuant to state law.
 - ii. In addition to any other legal or equitable remedy, and notwithstanding anything to the contrary in the Contract Document the Owner may be entitled to for a breach of the Agreement, if the Owner terminates this Agreement, in whole or in part, due to Contractor's breach of the obligations set forth above in this Section 13.11.1 Contractor shall be liable for actual and consequential damages to the Owner.
 - m. It is the express intention of the parties that this Agreement is not to be construed as a waiver of any immunities or defenses of the Owner under Texas law.
 - n. Notwithstanding any other provision in the Contract Documents to the contrary, public property is protected from forced sale and therefore may not be made the subject of a mechanic's lien. Nothing in the Contract Documents shall be construed to allow a mechanic's lien on public property owned by the Owner. The Owner does not waive its immunities or right to object to or contest such a lien.

Article 14. TERMINATION OR SUSPENSION OF THE CONTRACT

Section 14.1 Termination by the Contractor

- a. The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:
 - .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped; or
 - .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped.
- b. The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100

percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

- c. If one of the reasons described in Section 14.1.a or 14.1.b exists, the Contractor may, upon seven (7) days' notice to the Owner and Design Professional, terminate the Contract and recover from the Owner payment for Work executed, including other costs allowed by the law.
- d. If the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Design Professional, terminate the Contract and recover from the Owner as provided in Section 14.1.c.

Section 14.2 Termination by the Owner for Cause

- a. The Owner may terminate the Contract if the Contractor:
 - .1 refuses or fails to supply enough properly skilled workers or proper materials;
 - .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
 - .3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
 - .4 otherwise is guilty of substantial breach of a provision of the Contract Documents; or
 - .5 contractor becomes insolvent or makes a general assignment for the benefit of its creditors.
- b. When any of the reasons described in Section 14.2.a exist, and upon certification by the Design Professional that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:
 - .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
 - .2 Accept assignment of subcontracts pursuant to Section 5.4; and
 - .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.
- c. When the Owner terminates the Contract for one of the reasons stated in Section 14.2.a, the Contractor shall not be entitled to receive further payment.
- d. If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Design Professional's, Design Professional's consultants', and Owner's other consultants' services and expenses made necessary thereby, and other damages incurred by

the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

- i. The costs of finishing the Work include, without limitation, all reasonable attorneys' fees, additional title costs, insurance, additional interest because of any delay in completing the Work, and all other direct and indirect costs incurred by the Owner by reason of the termination of the Contractor as stated herein.

Section 14.3 Suspension by the Owner for Convenience

- a. The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.
- b. The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.a. Adjustment of the Contract Sum shall be as specified in Article 7. No adjustment shall be made to the extent:
 - .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
 - .2 that an equitable adjustment is made or denied under another provision of the Contract.

Section 14.4 Termination by the Owner for Convenience

- a. The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.
- b. Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:
 - .1 cease operations as directed by the Owner in the notice;
 - .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
 - .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.
- c. Upon such termination for the Owner's convenience, the Contractor shall recover as its sole remedy payment for Work properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely fabricated off the Project site, delivered and stored in accordance with the Contract Documents and Owner's further instructions. **The Contractor waives and forfeits all other claims for payment and damages, including, without limitation, anticipated profits, lost opportunity costs, and potential and actual unabsorbed overhead costs.** The Owner shall be credited for (1) payments previously made to the Contractor for the terminated portion of the Work; (2) claims that the Owner has against the Contractor under the Contract; and (3) the value of the materials, supplies, equipment, or other items that are to be disposed of by the Contractor that are part of the Contract.

Article 15. CLAIMS AND DISPUTES

Section 15.1 Claims

a. Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.a does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

b. Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the dispute resolution method selected in the Agreement and within the period specified by applicable law.

c. Notice of Claims

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Design Professional, if the Design Professional is not serving as the Initial Decision Maker.; provided, however, that the claimant shall use its best efforts to furnish the Initial Decision Maker and the other party, as expeditiously as possible, with notice of any Claim including, without limitation, those in connection with concealed or unknown conditions, once such claim is recognized, and shall cooperate with the Design Professional and the party against whom the claim is made in any effort to mitigate the alleged or potential damages, delay, or other adverse consequences arising out of the condition that is the cause of such a Claim. Claims by either party must be initiated within twenty-one (21) days after occurrence of the event giving rise to such Claim or within twenty-one (21) days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

i. Claims Made After Final Payment

After Final Payment, Claims made by the Contractor that have not otherwise been waived pursuant to this Contract, must be initiated within one hundred and eighty (180) days from the date of Final Payment by written notice to the Owner as a condition precedent to the Contractor's right to sue on the Contract.

ii. Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.b, shall be initiated by notice to the other party. In such event, no recommendation by the Initial Decision Maker is required.

d. Continuing Contract Performance

i. Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

ii. The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance

with this Article 15. The Design Professional will prepare Change Orders and issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

e. Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.c shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4. Damages available to the Contractor are limited to those set forth in the Texas Local Government Code, Subchapter I, Section 271.153 or its successor statute(s).

f. Claims for Additional Time

- i. If the Contractor wishes to make a Claim for an increase in the Contract Time, the Contractor shall provide written notice as required by Sections 8.3.d. and 8.3.e.
- ii. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented in accordance with Section 8.3.e.

g. Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.g shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

Section 15.2 Initial Decision

Omitted.

Section 15.3 Mediation

- a. Claims, disputes, or other matters in controversy arising out of or related to the Contract shall be subject to mediation as a condition precedent to precedent to filing suit in a state district court having competent jurisdiction per the Contract Documents. If a statute of limitations is at issue, then suit may be filed by either party to toll the statute, but the suit shall then be stayed pending completion of the agreed mediation. If the parties cannot agree on a mediator, then the court may appoint one upon application of either party.
- b. The parties shall endeavor to resolve their Claims by mediation. A request for mediation, shall be made in writing, delivered to the other party to the Contract.
- c. Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a

demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings.

- d. The parties shall share the mediator's fee equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Written agreement(s) reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

SECTION 00 73 01
SUPPLEMENTARY CONDITIONS - CSP
TO
GENERAL CONDITIONS

Supplementary Conditions

These Supplementary Conditions modify and supplement Section 00 72 00 - General Conditions, and other provisions of the Contract Documents as indicated below. All provisions of the General Conditions that are modified or supplemented remain in full force and effect as so modified or supplemented. All provisions of the General Conditions which are not so modified or supplemented remain in full force and effect.

Defined Terms

The terms used in these Supplementary Conditions which are defined in the General Conditions have the meaning assigned to them in the General Conditions, unless specifically noted herein.

Modifications and Supplements

The following are instructions that modify or supplement specific paragraphs in the General Conditions and other Contract Documents.

SC-1.01 "Defined Terms"

The following Terms are added to the General Conditions as follows:

Competitive Sealed Proposals – A procurement method by which a governmental entity requests proposals, evaluates and ranks the Offerors, and negotiates a contract with a general contractor for the construction, rehabilitation, alteration, or repair of a facility.

Daily Value – The City-determined value in dollars as indicated in the Proposal Form as the value of one Day for the purposes of determining the Incentive (if applicable) for Substantial Completion relative to the Contract Time and achievement of Substantial Completion.

Weekend Working Hours—Those hours between 8:00 a.m. and 8:30 p.m. on Saturday, and between 1:00 p.m. and 8:30 p.m. on Sunday or on a federal or state holiday observed by the City, as approved in advance by the City for performing Work.

Working Day—Defined as a Business Day but excluding any days that weather or other conditions beyond the reasonable control of the Contractor prevents the performance of the principal unit of work underway for a continuous period of not less than 7 hours between 7:00 a.m. and 8:00 p.m.

SC-2.01

Easement limits shown on the Drawings are approximate and were provided to establish a basis for proposals. Upon receiving the final easements descriptions, Contractor shall compare them to the lines shown on the Contract Drawings.

SC-2.01A., "Availability of Lands"

The following is a list of known outstanding right-of-way, and/or easements to be acquired, if any as of May 30, 2025:

Outstanding Right-Of-Way, and/or Easements to Be AcquiredPARCEL
NUMBER

OWNER

TARGET DATE
OF POSSESSION

None

The Contractor understands and agrees that the dates listed above are estimates only, are not guaranteed, and do not bind the City.

If Contractor considers the final easements provided to differ materially from the representations on the Contract Drawings, Contractor shall within five (5) Business Days and before proceeding with the Work, notify City in writing associated with the differing easement line locations.

SC-2.01B, "Availability of Lands"**Utilities or obstructions to be removed, adjusted, and/or relocated**

The following is the list of utilities and/or obstructions that have not been removed, adjusted, and/or relocated as of May 30, 2025:

EXPECTED
OWNER

UTILITY AND LOCATION

TARGET DATE OF
ADJUSTMENT

None

The Contractor understands and agrees that the dates listed above are estimates only, are not guaranteed, and do not bind the City.

SC-3.01, "Subsurface and Physical Conditions"

The following are reports of explorations and tests of subsurface conditions at the site of the Work:

None

The following are drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site of the Work:

None

SC-4.01, "Underground Facilities"

The following are additional resources for identification of Underground Facilities which are at or contiguous to the site of the Work, and which are not necessarily shown in the Drawings:

None

SC-5.01, "Hazardous Environmental Conditions at Site"

The following are reports and drawings of existing hazardous environmental conditions known to the City:

None

SC-6.01, "Certificates of Insurance"

The entities listed below are "additional insureds as their interest may appear" including their respective officers, directors, agents and employees.

- (1) City
- (2) Consultant: Biggs & Mathews Environmental, Inc.
- (3) Other:
- None

SC-7.01, "Concerning Subcontractors and Suppliers"

The following subcontractors shall be required to be utilized by the Contractor for specific portions of the Work as indicated below:

Required Subcontractors

SUBCONTRACTOR COMPANY NAME	DESCRIPTION OF WORK TO BE PERFORMED
----------------------------	-------------------------------------

The Autumn Breeze Group, Inc.	Recanvas building, install vents and fans
-------------------------------	---

SC-8.01., "Permits and Utilities"**SC-8.01A., "Contractor obtained permits and licenses"**

The following are known permits and/or licenses required by the Agreement to be acquired by the Contractor:

- 1. City building permit

SC-8.01B. "City obtained permits and licenses"

The following are known permits and/or licenses required by the Agreement to be acquired by the City:
None

SC-8.01C. "Outstanding permits and licenses"

The following is a list of known outstanding permits and/or licenses to be acquired, if any as of May 30, 2025:

Outstanding Permits and/or Licenses to Be Acquired

OWNER	PERMIT OR LICENSE AND LOCATION	TARGET DATE OF POSSESSION
-------	--------------------------------	---------------------------

None

SC-10.01, "Coordination"

The individuals or entities listed below have contracts with the City for the performance of other work at the Site:

Vendor	Scope of Work	Coordination Authority
None		

SC-11.01, "Communications to Contractor"**SC-12.01, "City's Project Manager"**

The City's Project Manager for this Contract is Arturo Garcia, or his/her successor pursuant to **written notification from the City Engineer.**

SC-13.01, "Tests and Inspections"

None

SC-14.01, "Methods and Procedures"

None

SC – 15.01, "Documents"

Any documents submitted to the City in electronic format shall be considered equivalent to an original of such document.

SC – 16.01 "Labor; Working Hours"

1. 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.
2. Contractor shall be fully responsible to City for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
3. 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 on Business Days. Contractor will not permit the performance of Work outside of regular working hours on Business Days without City's prior written consent (which will not be unreasonably withheld). Contractor's written request (by letter or electronic communication) for City's written consent must be made as follows:
 - a. for Work beyond regular working hours on Business Days, request must be made by noon at least two (2) Business Days prior;
 - b. for Work during Weekend Working Hours, request must be made by noon of the preceding Wednesday; and
 - c. for Work on state or federal holidays observed by the City, request must be made sufficiently in advance of the holiday, to satisfy requirements for City Council approval.

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Summary of Work to be performed in accordance with the Contract Documents

B. Deviations from this City of Denton Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract
2. Division 1 - General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered incidental to the various items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Work Covered by Contract Documents

1. Work is to include furnishing all labor, materials, and equipment, and performing all Work necessary for this construction project as detailed in the Drawings and Specifications.

B. Incidental Work

1. Any and all Work specifically governed by documentary requirements for the project, such as conditions imposed by the Contract Documents in which no specific item for bid has been provided for in the Proposal, then the item shall be considered as an incidental item of Work, the cost of which shall be included in the price bid in the Proposal for various bid items.

C. Use of Premises

1. Coordinate uses of premises under direction of the City.
2. Assume full responsibility for protection and safekeeping of materials and equipment stored on the Site.
3. Use and occupy only portions of the public streets and alleys, or other public places or other rights-of-way as provided for in the ordinances of the City, as shown in the Contract Documents, or as may be specifically authorized in writing by the City.
 - a. A reasonable amount of tools, materials, and equipment for construction purposes may be stored in such space, but no more than is necessary to avoid delay in the construction operations.

- b. Excavated and waste materials shall be stored in such a way as not to interfere with the use of spaces that may be designated to be left free and unobstructed and so as not to inconvenience occupants of adjacent property.
- c. If the street is occupied by railroad tracks, the Work shall be carried on in such manner as not to interfere with the operation of the railroad.
 - 1) All Work shall be in accordance with railroad requirements set forth in Division 0 as well as the railroad permit.

D. Work within Easements

1. Do not enter upon private property for any purpose without having previously obtained permission from the owner of such property.
2. Do not store equipment or material on private property unless and until the specified approval of the property owner has been secured in writing by the Contractor and a copy furnished to the City.
3. Unless specifically provided otherwise, clear all rights-of-way or easements of obstructions which must be removed to make possible proper prosecution of the Work as a part of the project construction operations.
4. Preserve and use every precaution to prevent damage to, all trees, shrubbery, plants, lawns, fences, culverts, curbing, and all other types of structures or improvements, to all water, sewer, and gas lines, to all conduits, overhead pole lines, or appurtenances thereof, including the construction of temporary fences and to all other public or private property adjacent to the Work.
5. Notify the proper representatives of the owners or occupants of the public or private lands of interest in lands which might be affected by the Work.
 - a. Such notice shall be made at least 48 hours in advance of the beginning of the Work.
 - b. Notices shall be applicable to both public and private utility companies and any corporation, company, individual, or other, either as owners or occupants, whose land or interest in land might be affected by the Work.
 - c. Be responsible for all damage or injury to property of any character resulting from any act, omission, neglect, or misconduct in the manner or method or execution of the Work, or at any time due to defective work, material, or equipment.
6. Fence
 - a. Restore all fences encountered and removed during construction of the Work to the original or a better than original condition.
 - b. Erect temporary fencing in place of the fencing removed whenever the Work is not in progress and when the site is vacated overnight, and/or at all times to provide site security.
 - c. The cost for all fence work within easements, including removal, temporary closures and replacement, shall be incidental to the various items bid in the project proposal, **unless a bid item is specifically provided in the proposal.**

- 1 **1.5 SUBMITTALS [NOT USED]**
- 2 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**
- 3 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**
- 4 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**
- 5 **1.9 QUALITY ASSURANCE [NOT USED]**
- 6 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**
- 7 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**
- 8 **1.12 WARRANTY [NOT USED]**

9 **PART 2 - PRODUCTS [NOT USED]**

10 **PART 3 - EXECUTION [NOT USED]**

11 **END OF SECTION**

12

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

13

SECTION 01 25 00
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. The procedure for requesting the approval of substitution of a product that is not equivalent to a product which is specified by descriptive or performance criteria or defined by reference to 1 or more of the following:
 - a. Name of manufacturer
 - b. Name of vendor
 - c. Trade name
 - d. Catalog number
2. Substitutions are not "or-equals".

B. Deviations from this City of Denton Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered incidental to the various items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Request for Substitution - General

1. Within 30 days after award of Contract (unless noted otherwise), the City will consider formal requests from Contractor for substitution of products in place of those specified.
2. Certain types of equipment and kinds of material are described in Specifications by means of references to names of manufacturers and vendors, trade names, or catalog numbers.
 - a. When this method of specifying is used, it is not intended to exclude from consideration other products bearing other manufacturer's or vendor's names, trade names, or catalog numbers, provided said products are "or-equals," as determined by City.
3. Other types of equipment and kinds of material may be acceptable substitutions under the following conditions:
 - a. Or-equals are unavailable due to strike, discontinued production of products meeting specified requirements, or other factors beyond control of Contractor; or,

b. Contractor proposes a cost and/or time reduction incentive to the City.

1.5 SUBMITTALS

A. See Request for Substitution Form (attached)

B. Procedure for Requesting Substitution

1. Substitution shall be considered only:

- a. After award of Contract
- b. Under the conditions stated herein

2. Submit one PDF copy via email to the Project Manager and their duly appointed representative, including:

a. Documentation

- 1) Complete data substantiating compliance of proposed substitution with Contract Documents
- 2) Data relating to changes in construction schedule, when a reduction is proposed
- 3) Data relating to changes in cost

b. For products

1) Product identification

- a) Manufacturer's name
- b) Telephone number and representative contact name
- c) Specification Section or Drawing reference of originally specified product, including discrete name or tag number assigned to original product in the Contract Documents

2) Manufacturer's literature clearly marked to show compliance of proposed product with Contract Documents

3) Itemized comparison of original and proposed product addressing product characteristics including, but not necessarily limited to:

- a) Size
- b) Composition or materials of construction
- c) Weight
- d) Electrical or mechanical requirements

4) Product experience

- a) Location of past projects utilizing product
- b) Name and telephone number of persons associated with referenced projects knowledgeable concerning proposed product
- c) Available field data and reports associated with proposed product

5) Samples

- a) Provide at request of City.
- b) Samples become the property of the City.

c. For construction methods:

- 1) Detailed description of proposed method
- 2) Illustration drawings

C. Approval or Rejection

1. Written approval or rejection of substitution given by the City

2. City reserves the right to require proposed product to comply with color and pattern of specified product if necessary to secure design intent.

3. In the event the substitution is approved, the resulting cost and/or time reduction will be documented by Change Order in accordance with the General Conditions.

4. No additional contract time will be given for substitution.

5. Substitution will be rejected if:

- a. Submittal is not through the Contractor with his stamp of approval
- b. Request is not made in accordance with this Specification Section
- c. In the City's opinion, acceptance will require substantial revision of the original design
- d. In the City's opinion, substitution will not perform adequately the function consistent with the design intent

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

A. In making request for substitution or in using an approved product, the Contractor represents that the Contractor:

1. Has investigated proposed product, and has determined that it is adequate or superior in all respects to that specified, and that it will perform function for which it is intended
2. Will provide same guarantee for substitute item as for product specified
3. Will coordinate installation of accepted substitution into Work, to include building modifications if necessary, making such changes as may be required for Work to be complete in all respects
4. Waives all claims for additional costs related to substitution which subsequently arise

1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

EXHIBIT A
REQUEST FOR SUBSTITUTION FORM:

TO: _____

PROJECT: _____ DATE: _____

We hereby submit for your consideration the following product instead of the specified item for the above project:

SECTION	PARAGRAPH	SPECIFIED ITEM
---------	-----------	----------------

Proposed Substitution: _____

Reason for Substitution: _____

Include complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Fill in Blanks Below:

A. Will the undersigned contractor pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?

B. What effect does substitution have on other trades?

C. Differences between proposed substitution and specified item?

D. Differences in product cost or product delivery time?

E. Manufacturer's guarantees of the proposed and specified items are:

_____ Equal _____ Better (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted By: _____

For Use by City

Signature _____

____ Recommended ____ Recommended

as noted

Firm _____

____ Not recommended ____ Received late

Address _____

By _____

Date _____

Date _____

Telephone _____

Remarks _____

For Use by City:

____ Approved

____ Rejected

City _____

Date _____

SECTION 01 31 19
PRECONSTRUCTION MEETING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Provisions for the preconstruction meeting to be held prior to the start of Work to clarify construction contract administration procedures
- B. Deviations from this City of Denton Standard Specification
 1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
 2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered incidental to the various items bid. No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination

1. Attend preconstruction meeting.
2. Representatives of Contractor, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
3. Meeting administered by City may be tape recorded.
 - a. If recorded, tapes will be used to prepare minutes and retained by City for future reference.
4. Project Manager will establish their duly authorized representative(s) authorized to make decisions as identified in the Contract Documents.

B. Preconstruction Meeting

1. A preconstruction meeting will be held within 14 days after the execution of the Agreement and before Work is started.
 - a. The meeting will be scheduled and administered by the City.
2. The Project Manager will preside at the meeting, prepare the notes of the meeting and distribute copies of same to all participants who so request by fully completing the attendance form to be circulated at the beginning of the meeting.
3. Attendance shall include:
 - a. Project Manager
 - b. Project Manager's duly authorized representative (if any)
 - c. Contractor's project manager

- 1 d. Contractor's superintendent
- 2 e. Any subcontractor or supplier representatives whom the Contractor may desire
- 3 to invite or the City may request
- 4 f. Other City representatives
- 5 g. Others as appropriate
- 6 4. Construction Schedule
- 7 a. Prepare baseline construction schedule in accordance with Section 01 32 16 and
- 8 provide at Preconstruction Meeting.
- 9 b. City will notify Contractor of any schedule changes upon Notice of
- 10 Preconstruction Meeting.
- 11 5. Preliminary Agenda may include:
- 12 a. Introduction of Project Personnel
- 13 b. General Description of Project
- 14 c. Status of right-of-way, utility clearances, easements or other pertinent permits
- 15 d. Contractor's work plan and schedule
- 16 e. Contract Time
- 17 f. Notice to Proceed
- 18 g. Construction Staking
- 19 h. Progress Payments
- 20 i. Additional work and Change Order Procedures
- 21 j. Construction Change Directive
- 22 k. Disposal Site Letter for Waste Material
- 23 l. Insurance Renewals
- 24 m. Payroll Certification
- 25 n. Material Certifications and Quality Control Testing
- 26 o. Public Safety and Convenience
- 27 p. Documentation of Pre-Construction Conditions
- 28 q. Weekend Work Notification
- 29 r. Legal Holidays
- 30 s. Trench Safety Plans
- 31 t. Confined Space Entry Standards
- 32 u. Coordination with the City's representative for operations of existing water
- 33 systems
- 34 v. Storm Water Pollution Prevention Plan
- 35 w. Coordination with other contractors
- 36 x. Early Warning System
- 37 y. Contractor Evaluation
- 38 z. Special Conditions applicable to the project
- 39 aa. Damages Claims
- 40 bb. Submittal Procedures
- 41 cc. Substitution Procedures
- 42 dd. Correspondence Routing
- 43 ee. Record Drawings
- 44 ff. Temporary construction facilities
- 45 gg. Final Acceptance
- 46 hh. Final Payment
- 47 ii. Communications Plan
- 48 jj. Questions or Comments

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

SECTION 01 31 20
PROJECT MEETINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Provisions for project meetings throughout the construction period to enable orderly review of the progress of the Work and to provide for systematic discussion of potential problems

B. Deviations this City of Denton Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered incidental to the various items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination

1. Schedule, attend and administer as specified, periodic progress meetings, and specially called meetings throughout progress of the Work.
2. Representatives of Contractor, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
3. Meetings administered by City may be recorded.
4. Meetings, in addition to those specified in this Section, may be held when requested by the City, Engineer or Contractor.

B. Progress Meetings

1. Formal project coordination meetings will be held <Insert anticipated frequency, i.e. weekly, monthly, etc.>. Meetings will be scheduled and administered by Project Manager.
 - a. Additional meetings may be held at the request of the:
 - 1) City
 - 2) Engineer
 - 3) Contractor
 2. Additional progress meetings to discuss specific topics will be conducted on an as-needed basis. Such additional meetings shall include, but not be limited to:
 - a. Coordinating shutdowns

- 1 b. Installation of piping and equipment
- 2 c. Coordination between other construction projects
- 3 d. Resolution of construction issues
- 4 e. Equipment approval
- 5 3. The Project Manager will preside at progress meetings, prepare the notes of the
- 6 meeting and distribute copies of the same to all participants who so request by fully
- 7 completing the attendance form to be circulated at the beginning of each meeting.
- 8 4. Attendance shall include:
- 9 a. Contractor's project manager
- 10 b. Contractor's superintendent
- 11 c. Any subcontractor or supplier representatives whom the Contractor may desire
- 12 to invite or the City may request
- 13 d. Engineer's representatives
- 14 e. City's representatives
- 15 f. Others, as requested by the Project Manager
- 16 5. Preliminary Agenda may include:
- 17 a. Review of Work progress since previous meeting
- 18 b. Field observations, problems, conflicts
- 19 c. Items which impede construction schedule
- 20 d. Review of off-site fabrication, delivery schedules
- 21 e. Review of construction interfacing and sequencing requirements with other
- 22 construction contracts.
- 23 f. Corrective measures and procedures to regain projected schedule
- 24 g. Revisions to construction schedule
- 25 h. Progress, schedule, during succeeding Work period
- 26 i. Coordination of schedules
- 27 j. Review submittal schedules
- 28 k. Maintenance of quality standards
- 29 l. Pending changes and substitutions
- 30 m. Review proposed changes for:
- 31 1) Effect on construction schedule and on completion date
- 32 2) Effect on other contracts of the Project

- 1 n. Review Record Documents
- 2 o. Review monthly pay request
- 3 p. Review status of Requests for Information
- 4 6. Meeting Location
- 5 a. The City will establish a meeting location.
- 6 l) To the extent practicable, meetings will be held at the Site.

7 **1.5 SUBMITTALS [NOT USED]**

8 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**

9 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

10 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

11 **1.9 QUALITY ASSURANCE [NOT USED]**

12 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

13 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

14 **1.12 WARRANTY [NOT USED]**

15 **PART 2 - PRODUCTS [NOTUSED]**

16 **PART 3 - EXECUTION [NOTUSED]**

17 **END OF SECTION**

18

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

19

SECTION 01 33 00
SUBMITTALS**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. General methods and requirements of submissions applicable to the following Work-related submittals:
 - a. Shop Drawings
 - b. Product Data (including Project Material Submittal Checklist submittals)
 - c. Samples
 - d. Mock Ups

B. Deviations from this City of Denton Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES**A. Measurement and Payment**

1. Work associated with this Item is considered incidental to the various items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]**1.4 ADMINISTRATIVE REQUIREMENTS****A. Coordination**

1. Notify the City in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.
2. Coordination of Submittal Times
 - a. Prepare, prioritize and transmit each submittal sufficiently in advance of performing the related Work or other applicable activities, or within the time specified in the individual Work Sections, of the Specifications.
 - b. Contractor is responsible such that the installation will not be delayed by processing times including, but not limited to:
 - a) Disapproval and resubmittal (if required)
 - b) Coordination with other submittals
 - c) Testing
 - d) Purchasing
 - e) Fabrication
 - f) Delivery
 - g) Similar sequenced activities
 - c. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.

- d. Make submittals promptly in accordance with approved schedule, and in such sequence as to cause no delay in the Work or in the work of any other contractor.

B. Submittal Numbering

1. When submitting shop drawings or samples, utilize a submittal cross-reference identification numbering system in the following manner:
 - a. Use the applicable Specification Section Number.
 - b. For the next 2 digits number use numbers 01-99 to sequentially number each initial separate item or drawing submitted under each specific Section number.
 - c. Last use a letter, A-Z, indicating the resubmission of the same drawing (i.e. A=2nd submission, B=3rd submission, C=4th submission, etc.). A typical submittal number would be as follows:

303-02-B

- 1) 303 is the Specification Section for Portland Cement Concrete Pavement
- 2) 02 is the second initial submittal under this Specification Section
- 3) B is the third submission (second resubmission) of that particular shop drawing

C. Contractor Certification

1. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:
 - a. Field measurements
 - b. Field construction criteria
 - c. Catalog numbers and similar data
 - d. Conformance with the Contract Documents
2. Provide each shop drawing, sample and product data submitted by the Contractor with a Certification Statement affixed including:
 - a. The Contractor's Company name
 - b. Signature of submittal reviewer
 - c. Certification Statement
 - 1) "By this submittal, I hereby represent that I have determined and verified field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings."

D. Submittal Format

1. Fold shop drawings larger than 8 ½ inches x 11 inches to 8 ½ inches x 11 inches.
2. Bind shop drawings and product data sheets together.
3. Order
 - a. Cover Sheet
 - 1) Description of Packet
 - 2) Contractor Certification
 - b. List of items / Table of Contents
 - c. Product Data /Shop Drawings/Samples /Calculations

E. Submittal Content

1. The date of submission and the dates of any previous submissions

- 1 2. The Project title and number
- 2 3. Contractor identification
- 3 4. The names of:
- 4 a. Contractor
- 5 b. Supplier
- 6 c. Manufacturer
- 7 5. Identification of the product, with the Specification Section number, page and
- 8 paragraph(s)
- 9 6. Field dimensions, clearly identified as such
- 10 7. Relation to adjacent or critical features of the Work or materials
- 11 8. Applicable standards, such as ASTM or Federal Specification numbers
- 12 9. Identification by highlighting of deviations from Contract Documents
- 13 10. Identification by highlighting of revisions on resubmittals
- 14 11. An 8-inch x 3-inch blank space for Contractor and City stamps
- 15 F. Shop Drawings
- 16 1. As specified in individual Work Sections includes, but is not necessarily limited to:
- 17 a. Custom-prepared data such as fabrication and erection/installation (working)
- 18 drawings
- 19 b. Scheduled information
- 20 c. Setting diagrams
- 21 d. Actual shopwork manufacturing instructions
- 22 e. Custom templates
- 23 f. Special wiring diagrams
- 24 g. Coordination drawings
- 25 h. Individual system or equipment inspection and test reports including:
- 26 1) Performance curves and certifications
- 27 i. As applicable to the Work
- 28 2. Details
- 29 a. Relation of the various parts to the main members and lines of the structure
- 30 b. Where correct fabrication of the Work depends upon field measurements
- 31 1) Provide such measurements and note on the drawings prior to submitting
- 32 for approval.
- 33 G. Product Data
- 34 1. For submittals of product data for products included on the City's Product Material
- 35 Submittal Checklist, highlight each item selected for use on the Project.
- 36 2. For submittals of product data for products not included on the City's Product
- 37 Material Submittal Checklist, submittal data may include, but is not necessarily
- 38 limited to:
- 39 a. Standard prepared data for manufactured products (sometimes referred to as
- 40 catalog data)
- 41 1) Such as the manufacturer's product specification and installation
- 42 instructions
- 43 2) Availability of colors and patterns
- 44 3) Manufacturer's printed statements of compliances and applicability
- 45 4) Roughing-in diagrams and templates
- 46 5) Catalog cuts

- 6) Product photographs
- 7) Standard wiring diagrams
- 8) Printed performance curves and operational-range diagrams
- 9) Production or quality control inspection and test reports and certifications
- 10) Mill reports
- 11) Product operating and maintenance instructions and recommended spare-parts listing and printed product warranties
- 12) As applicable to the Work
3. Submittals of product data for products not included on the City's Product Material Submittal Checklist may be considered a Substitution in accordance with Section 01 25 00.
4. All deviations from City's Product Material Submittal Checklist shall require approval by the Engineer of Record for the Project.
- H. Samples
 1. As specified in individual Sections, include, but are not necessarily limited to:
 - a. Physical examples of the Work such as:
 - 1) Sections of manufactured or fabricated Work
 - 2) Small cuts or containers of materials
 - 3) Complete units of repetitively used products color/texture/pattern swatches and range sets
 - 4) Specimens for coordination of visual effect
 - 5) Graphic symbols and units of Work to be used by the City for independent inspection and testing, as applicable to the Work
 - I. Do not start Work requiring a shop drawing, sample or product data nor any material to be fabricated or installed prior to the approval or qualified approval of such item.
 1. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings and data is at the Contractor's risk.
 2. The City will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
 3. Complete project Work, materials, fabrication, and installations in conformance with approved shop drawings, applicable samples, and product data.
- J. Submittal Distribution
 1. Electronic Distribution
 - a. Provide all submittals in electronic form via email to Project Manager and their duly appointed representative.
 - b. Shop Drawings
 - 1) Email submittal to Project Manager and their duly appointed representative.
 - 2) Hard Copies
 - a) Not required
 - c. Product Data
 - 1) Email submittal to Project Manager and their duly appointed representative.
 - 2) Hard Copies
 - a) Not required
 - d. Samples
 - 1) Distributed to the Project Manager

K. Submittal Review

1. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. This is not to be construed as:
 - a. Permitting any departure from the Contract requirements
 - b. Relieving the Contractor of responsibility for any errors, including details, dimensions, and materials
 - c. Approving departures from details furnished by the City, except as otherwise provided herein
2. The review and approval of shop drawings, samples or product data by the City does not relieve the Contractor from his/her responsibility with regard to the fulfillment of the terms of the Contract.
 - a. All risks of error and omission are assumed by the Contractor, and the City will have no responsibility therefore.
3. The Contractor remains responsible for details and accuracy, for coordinating the Work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly and for performing Work in a safe manner.
4. If the shop drawings, data or samples as submitted describe variations and show a departure from the Contract requirements which City finds to be in the interest of the City and to be so minor as not to involve a change in Contract Price or time for performance, the City may return the reviewed drawings without noting an exception.
5. Submittals will be returned to the Contractor under 1 of the following codes:
 - a. Code 1
 - 1) "NO EXCEPTIONS TAKEN" is assigned when there are no notations or comments on the submittal.
 - a) When returned under this code the Contractor may release the equipment and/or material for manufacture.
 - b. Code 2
 - 1) "EXCEPTIONS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor.
 - a) The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.
 - c. Code 3
 - 1) "EXCEPTIONS NOTED/RESUBMIT". This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the package.
 - a) This resubmittal is to address all comments, omissions and non-conforming items that were noted.
 - b) Resubmittal is to be received by the City within 15 Calendar Days of the date of the City's transmittal requiring the resubmittal.
 - d. Code 4
 - 1) "NOT APPROVED" is assigned when the submittal does not meet the intent of the Contract Documents.
 - a) The Contractor must resubmit the entire package revised to bring the submittal into conformance.
 - b) It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.

6. Resubmittals

- a. Handled in the same manner as first submittals
 - 1) Corrections other than requested by the City
 - 2) Marked with revision triangle or other similar method
 - a) At Contractor's risk if not marked
- b. Submittals for each item will be reviewed no more than twice at the City's expense.
 - 1) All subsequent reviews will be performed at times convenient to the City and at the Contractor's expense, based on the City's or City Representative's then prevailing rates.
 - 2) Provide Contractor reimbursement to the City within 30 Calendar Days for all such fees invoiced by the City.
- c. The need for more than 1 resubmission or any other delay in obtaining City's review of submittals, will not entitle the Contractor to an extension of Contract Time.

7. Partial Submittals

- a. City reserves the right to not review submittals deemed partial, at the City's discretion.
- b. Submittals deemed by the City to be not complete will be returned to the Contractor, and will be considered "Not Approved" until resubmitted.
- c. The City may at its option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.

8. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, then written notice must be provided thereof to the City at least 7 Calendar Days prior to release for manufacture.

9. When the shop drawings have been completed to the satisfaction of the City, the Contractor may carry out the construction in accordance therewith and no further changes therein except upon written instructions from the City.

10. Each submittal, appropriately coded, will be returned within 30 Calendar Days following receipt of submittal by the City.

L. Mock ups

- 1. Mock Up units as specified in individual Sections, include, but are not necessarily limited to, complete units of the standard of acceptance for that type of Work to be used on the Project. Remove at the completion of the Work or when directed.

M. Qualifications

- 1. If specifically required in other Sections of these Specifications, submit a P.E. Certification for each item required.

N. Request for Information (RFI)

1. Contractor Request for additional information

- a. Clarification or interpretation of the contract documents
- b. When the Contractor believes there is a conflict between Contract Documents
- c. When the Contractor believes there is a conflict between the Drawings and Specifications
 - 1) Identify the conflict and request clarification
- d. When the Contractor encounters an unknown condition in the field

2. Use the Request for Information (RFI) form provided by the City (attached).

3. Numbering of RFI

- a. Prefix with "RFI" followed by series number, "-xxx", beginning with "01" and increasing sequentially with each additional transmittal.

4. Sufficient information shall be attached to permit a written response without further information.

5. The City will log each request and will review the request.

- a. If review of the project information request indicates that a change to the Contract Documents is required, the City will issue a Field Order or Change Order, as appropriate.

1.5 SUBMITTALS [NOT USED]**1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]****1.7 CLOSEOUT SUBMITTALS [NOT USED]****1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]****1.9 QUALITY ASSURANCE [NOT USED]****1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]****1.11 FIELD [SITE] CONDITIONS [NOT USED]****1.12 WARRANTY [NOT USED]****PART 2 - PRODUCTS [NOT USED]****PART 3 - EXECUTION [NOT USED]****END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

REQUEST FOR INFORMATION

Project:	RFI #:
Engineering Project No.:	Date Sent:
Sender:	Receiver:
Copies To:	

Subject:
Request:
Sender's Proposed Answer/Solution:

THE PROPOSED ANSWER/SOLUTION ☐ IS, ☐ IS NOT, INCLUDED IN THE CONTRACT.

Receiver's Response:

Response By:	Company:	Date:
---------------------	-----------------	--------------

DISTRIBUTION:

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Provide temporary facilities and controls needed for the Work including, but not necessarily limited to:
 - a. Temporary utilities
 - b. Sanitary facilities
 - c. Storage Sheds and Buildings
 - d. Dust control
 - e. Temporary fencing of the construction site

B. Deviations from this City of Denton Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered incidental to the various Items bid. No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

A. Temporary Utilities

1. Obtaining Temporary Service

- a. Make arrangements with utility service companies for temporary services.
- b. Abide by rules and regulations of utility service companies or authorities having jurisdiction.
- c. Be responsible for utility service costs until Work is approved for Final Acceptance.
 - 1) Included are fuel, power, light, heat and other utility services necessary for execution, completion, testing and initial operation of Work.

2. Construction Water

- a. Contractor to provide water required for and in connection with Work to be performed and for specified tests of piping, equipment, devices or other use as required for the completion of the Work.
- b. Provide and maintain adequate supply of potable water for domestic consumption by Contractor, if required.
- c. Coordination
 - 1) Contact City 1 week before water for construction is desired

1 d. Metering and Payment for Construction Water

2 1) For water system improvements:

- 3 a) Obtain construction water meter from City to track water usage. Water
-
- 4 will be provided at no cost to Contractor.

5 2) For all other projects:

- 6 a) Obtain construction water meter from City for payment as billed by
-
- 7 City's established rates.

8 3. Electricity and Lighting

- 9 a. Provide and pay for electric powered service as required for Work, including
-
- 10 testing of Work.

11 1) Provide power for lighting, operation of equipment, or other use.

- 12 b. Electric power service includes temporary power service or generator to
-
- 13 maintain operations during scheduled shutdown.

14 4. Telephone

- 15 a. Provide emergency telephone service at Site for use by Contractor personnel
-
- 16 and others performing work or furnishing services at Site.

17 5. Temporary Heat and Ventilation

- 18 a. Provide temporary heat as necessary for protection or completion of Work.
-
- 19 b. Provide temporary heat and ventilation to assure safe working conditions.

20 B. Sanitary Facilities

21 1. Provide and maintain sanitary facilities for persons on Site.

- 22 a. Comply with regulations of State and local departments of health.

23 2. Enforce use of sanitary facilities by construction personnel at job site.

- 24 a. Enclose and anchor sanitary facilities.

- 25 b. No discharge will be allowed from these facilities.

- 26 c. Collect and store sewage and waste so as not to cause nuisance or health
-
- 27 problem.

- 28 d. Haul sewage and waste off-site at no less than weekly intervals and properly
-
- 29 dispose in accordance with applicable regulation.

30 3. Locate facilities near Work Site and keep clean and maintained throughout Project.

31 4. Remove facilities at completion of Project

32 C. Storage Sheds and Buildings

33 1. Provide adequately ventilated, watertight, weatherproof storage facilities with floor
34 above ground level for materials and equipment susceptible to weather damage.35 2. Storage of materials not susceptible to weather damage may be on blocks off
36 ground.

37 3. Store materials in a neat and orderly manner.

- 38 a. Place materials and equipment to permit easy access for identification,
-
- 39 inspection and inventory.

40 4. Equip building with lockable doors and lighting, and provide electrical service for
41 equipment space heaters and heating or ventilation as necessary to provide storage
42 environments acceptable to specified manufacturers.43 5. Fill and grade site for temporary structures to provide drainage away from
44 temporary and existing buildings.

45 6. Remove building from site prior to Final Acceptance.

- 1 D. Temporary Fencing
- 2 1. Provide and maintain for the duration or construction when required in contract
- 3 documents
- 4 E. Dust Control
- 5 1. Contractor is responsible for maintaining dust control through the duration of the
- 6 project.
- 7 a. Contractor remains on-call at all times
- 8 b. Must respond in a timely manner
- 9 F. Temporary Protection of Construction
- 10 1. Contractor or subcontractors are responsible for protecting Work from damage due
- 11 to weather.
- 12 **1.5 SUBMITTALS [NOT USED]**
- 13 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]**
- 14 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**
- 15 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**
- 16 **1.9 QUALITY ASSURANCE [NOT USED]**
- 17 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**
- 18 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**
- 19 **1.12 WARRANTY [NOT USED]**
- 20 **PART 2 - PRODUCTS [NOT USED]**
- 21 **PART 3 - EXECUTION [NOT USED]**
- 22 **3.1 INSTALLERS [NOT USED]**
- 23 **3.2 EXAMINATION [NOT USED]**
- 24 **3.3 PREPARATION [NOT USED]**
- 25 **3.4 INSTALLATION**
- 26 A. Temporary Facilities
- 27 1. Maintain all temporary facilities for duration of construction activities as needed.

16

SECTION 01 70 00
MOBILIZATION AND REMOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Mobilization and Demobilization

a. Mobilization

- 1) Transportation of Contractor's personnel, equipment, and operating supplies to the Site
- 2) Establishment of necessary general facilities for the Contractor's operation at the Site
- 3) Premiums paid for performance and payment bonds
- 4) Transportation of Contractor's personnel, equipment, and operating supplies to another location within the designated Site
- 5) Relocation of necessary general facilities for the Contractor's operation from 1 location to another location on the Site.

b. Demobilization

- 1) Transportation of Contractor's personnel, equipment, and operating supplies away from the Site including disassembly
- 2) Site Clean-up
- 3) Removal of all buildings and/or other facilities assembled at the Site for this Contract

c. Mobilization and Demobilization do not include activities for specific items of work that are for which payment is provided elsewhere in the contract.

2. Remobilization

a. Remobilization for Suspension of Work specifically required in the Contract Documents or as required by City includes:

1) Demobilization

- a) Transportation of Contractor's personnel, equipment, and operating supplies from the Site including disassembly or temporarily securing equipment, supplies, and other facilities as designated by the Contract Documents necessary to suspend the Work.
- b) Site Clean-up as designated in the Contract Documents

2) Remobilization

- a) Transportation of Contractor's personnel, equipment, and operating supplies to the Site necessary to resume the Work.
- b) Establishment of necessary general facilities for the Contractor's operation at the Site necessary to resume the Work.

3) No Payments will be made for:

- a) Mobilization and Demobilization from one location to another on the Site in the normal progress of performing the Work.
- b) Stand-by or idle time
- c) Lost profits

1 B. Deviations from this City of Denton Standard Specification

2 1. None.

3 C. Related Specification Sections include, but are not necessarily limited to:

4 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract

5 2. Division 1 – General Requirements

6 **1.2 PRICE AND PAYMENT PROCEDURES**

7 A. Measurement and Payment

8 1. Mobilization and Demobilization

9 a. Measurement

10 1) This Item will be measured by the lump sum as the work progresses.

11 b. Payment

12 1) For this Item, the adjusted Contract amount will be calculated as the total
13 Contract amount less the lump sum for mobilization. Mobilization shall be
14 made in partial payments as follows:

15 a) When 1% of the adjusted Contract amount for construction Items is
16 earned, 25% of the mobilization lump sum bid will be paid.

17 b) When 25% of the adjusted Contract amount for construction Items is
18 earned, 50% of the mobilization lump sum bid will be paid. Previous
19 payments under the Item will be deducted from this amount.

20 c) When 50% of the adjusted Contract amount for construction Items is
21 earned, 75% of the mobilization lump sum bid will be paid. Previous
22 payments under the Item will be deducted from this amount.

23 d) When 75% of the adjusted Contract amount for construction Items is
24 earned, 100% of the mobilization lump sum bid will be paid. Previous
25 payments under the Item will be deducted from this amount.

26 **e) A bid containing a total for "Mobilization" in excess of 10% of**
27 **total contract shall be considered unbalanced and a cause for**
28 **consideration of rejection.**

29 c. The price bid shall include:

30 1) Mobilization of equipment to Site

31 2) Performance Bond

32 3) Payment Bond

33 4) Maintenance Bond

34 5) Remobilization as identified in the Contract Documents

35 6) Demobilization

36 d. No payments will be made for standby, idle time, or lost profits associated this
37 Item.

38 2. Remobilization for suspension of Work not identified in the Contract Documents,
39 as required by City

40 a. Measurement and Payment

41 1) This shall be submitted as a Contract Claim in accordance with Article 11
42 of Section 00 72 00.

43 2) No payments will be made for standby, idle time, or lost profits associated
44 with this Item.

45 **1.3 REFERENCES [NOT USED]**

10 **PART 2 - PRODUCTS [NOT USED]**

11 **PART 3 - EXECUTION [NOT USED]**

13

14
15

1

SECTION 01 71 23

2

CONSTRUCTION STAKING AND SURVEY

3

PART 1 - GENERAL

4

1.1 SUMMARY

5

A. Section Includes:

6

1. Requirements for construction staking to be provided by the Contractor.

7

2. Requirements for coordination with City to allow performance of as-built survey at the Site.

8

9

B. Deviations from this City of Denton Standard Specification

10

1. None

11

C. Related Specification Sections include, but are not necessarily limited to:

12

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract

13

2. Division 1 – General Requirements

14

1.2 PRICE AND PAYMENT PROCEDURES

15

A. Measurement and Payment

16

1. Construction Staking

17

a. Measurement and Payment

18

1) Work associated with this Item is considered incidental to the various Items

19

bid. No separate payment will be allowed for this Item.

20

2. As-Built Survey

21

a. Measurement and Payment

22

1) Work associated with this Item is considered incidental to the various Items

23

bid. No separate payment will be allowed for this Item.

24

1.3 REFERENCES [NOT USED]

25

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

26

1.5 SUBMITTALS

27

A. Submittals, if required, shall be in accordance with Section 01 33 00.

28

B. All submittals shall be approved by the City prior to delivery.

29

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

30

A. Certificates

31

1. Provide certificate certifying that elevations and locations of improvements are in conformance or non-conformance with requirements of the Contract Documents.

32

a. Certificate must be sealed by a registered professional land surveyor in the State of Texas.

33

34

B. Field Quality Control Submittals

35

1. Documentation verifying accuracy of field engineering work.

36

C. As-built Survey Submittal:

37

1. AutoCAD (.dwg)
2. ESRI Shapefile (.shp)
3. CSV file (.csv), formatted with X and Y coordinates in separate columns
4. Include vertical and horizontal data tied to original project control and benchmarks,
and feature descriptions

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

A. Construction Staking

1. Construction staking will be performed by the Contractor.
2. Coordination
 - a. It is the Contractor's responsibility to coordinate staking such that construction activities are not delayed or negatively impacted.
3. General
 - a. Contractor is responsible for preserving and maintaining staking.
 - b. If in the opinion of the City, a sufficient number of stakes or markings have been lost, destroyed or disturbed, by Contractor's neglect, such that the contracted Work cannot take place, then the Contractor will be required to re-stake the deficient areas.

B. As-built Survey

1. As-built Survey will be performed by the Contractor.
2. Coordination
 - a. Contractor to verify that control data established in the design survey and required for construction remains intact.
 - b. It is the Contractor's responsibility to coordinate As-built Survey such that construction activities are not delayed or negatively impacted.
 - c. Contractor shall restore or replace all necessary control data damaged during construction operations.
 - d. For sewer mains and water lines 12-inch and smaller in diameter, if permitted by City in writing, Contractor may physically measure depth and mark the location during the progress of construction and perform As-built Survey after the facility has been buried. The Contractor is responsible for the quality control required to ensure accuracy if this approach is permitted.
3. General
 - a. As-built survey will be performed in order to maintain complete and accurate logs of control and survey work as it progresses for Project Records.
 - b. The Contractor perform as-built survey to obtain construction features including, but not limited to, the following:
 - 1) All Utility Lines
 - a) Rim and flowline elevations and coordinates for each manhole or junction structure
 - 2) Water Lines
 - a) Top of pipe elevations and coordinates for water lines at the following locations:
 - (1) Every 250 linear feet

- 1 (2) Horizontal and vertical points of inflection, curvature, etc. (All
- 2 Fittings)
- 3 (3) Cathodic protection test stations
- 4 (4) Sampling stations
- 5 (5) Meter boxes/vaults (All sizes)
- 6 (6) Fire lines
- 7 (7) Fire hydrants and valves
- 8 (8) Gate valves and Butterfly Valves
- 9 (9) Plugs, stubouts, dead-end lines
- 10 (10) Air Release valves (Manhole rim and vent pipe)
- 11 (11) Blow off valves (Manhole rim and valve lid)
- 12 (12) Pressure plane valves
- 13 (13) Cleaning wyes
- 14 (14) Casing pipe (each end)
- 15 b) Storm Sewer
- 16 (1) Top of pipe elevations and coordinates at the following locations:
- 17 (a) Every 250 linear feet
- 18 (b) Horizontal and vertical points of inflection, curvature, etc.
- 19 c) Sanitary Sewer
- 20 (1) Top of pipe elevations and coordinates for sanitary sewer lines at
- 21 the following locations:
- 22 (a) Every 250 linear feet
- 23 (b) Horizontal and vertical points of inflection, curvature, etc.
- 24 (c) Cleanouts
- 25 c. As-built survey will be performed in order to maintain complete and accurate
- 26 logs of control and survey work associated with meeting or exceeding the line
- 27 and grade required by these Specifications.
- 28 1) The Contractor remains fully responsible for the accuracy of the work and
- 29 the correction of it, as required.
- 30 2) Monitor line and grade continuously during construction.
- 31 3) Record deviation with respect to design line and grade once at each pipe
- 32 joint and submit daily records to City.
- 33 4) If the installation does not meet the specified tolerances, immediately notify
- 34 the City and correct the installation in accordance with the Contract
- 35 Documents.
- 36 d. Submit to the City copies of field notes, if requested, used to establish all lines
- 37 and grades and allow the City to check guidance system setup prior to
- 38 beginning each tunneling drive.

39 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

40 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

41 **1.12 WARRANTY [NOT USED]**

42 **PART 2 - PRODUCTS [NOTUSED]**

43 **PART 3 - EXECUTION**

44 **3.1 INSTALLERS [NOT USED]**

- END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

1 SECTION 01 74 23
2 CLEANING

3 PART 1 - GENERAL

4 1.1 SUMMARY

5 A. Section Includes:

- 6 1. Intermediate and final cleaning for Work not including special cleaning of closed**
7 systems specified elsewhere

8 B. Deviations from this City of Denton Standard Specification

- 9 1. None.**

10 C. Related Specification Sections include, but are not necessarily limited to:

- 11 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract**
12 2. Division 1 – General Requirements

13 1.2 PRICE AND PAYMENT PROCEDURES

14 A. Measurement and Payment

- 15 1. Work associated with this Item is considered incidental to the various Items bid.**
16 No separate payment will be allowed for this Item.

17 1.3 REFERENCES [NOT USED]

18 1.4 ADMINISTRATIVE REQUIREMENTS

19 A. Scheduling

- 20 1. Schedule cleaning operations so that dust and other contaminants disturbed by**
21 cleaning process will not fall on newly painted surfaces.
22 2. Schedule final cleaning upon completion of Work and immediately prior to final
23 inspection.

24 1.5 SUBMITTALS [NOT USED]

25 1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

26 1.7 CLOSEOUT SUBMITTALS [NOT USED]

27 1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

28 1.9 QUALITY ASSURANCE [NOT USED]

29 1.10 STORAGE, AND HANDLING

30 A. Storage and Handling Requirements

- 31 1. Store cleaning products and cleaning wastes in containers specifically designed for**
32 those materials.

1 **1.11 FIELD [SITE] CONDITIONS [NOT USED]**

2 **1.12 WARRANTY [NOT USED]**

3 **PART 2 - PRODUCTS**

4 **2.1 OWNER-FURNISHED [or] OWNER-SUPPLIED PRODUCTS [NOT USED]**

5 **2.2 MATERIALS**

6 A. Cleaning Agents

7 1. Compatible with surface being cleaned

8 2. New and uncontaminated

9 3. For manufactured surfaces

10 a. Material recommended by manufacturer

11 **2.3 ACCESSORIES [NOT USED]**

12 **2.4 SOURCE QUALITY CONTROL [NOT USED]**

13 **PART 3 - EXECUTION**

14 **3.1 INSTALLERS [NOT USED]**

15 **3.2 EXAMINATION [NOT USED]**

16 **3.3 PREPARATION [NOT USED]**

17 **3.4 APPLICATION [NOT USED]**

18 **3.5 REPAIR / RESTORATION [NOT USED]**

19 **3.6 RE-INSTALLATION [NOT USED]**

20 **3.7 FIELD [OR] SITE QUALITY CONTROL [NOT USED]**

21 **3.8 SYSTEM STARTUP [NOT USED]**

22 **3.9 ADJUSTING [NOT USED]**

23 **3.10 CLEANING**

24 A. General

25 1. Prevent accumulation of wastes that create hazardous conditions.

26 2. Conduct cleaning and disposal operations to comply with laws and safety orders of
27 governing authorities.

28 3. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in
29 storm or sanitary drains or sewers.

30 4. Dispose of degradable debris at an approved solid waste disposal site.

31 5. Dispose of nondegradable debris at an approved solid waste disposal site or in an
32 alternate manner approved by City and regulatory agencies.

6. Transport and deposit vegetative material removed as a result of work operations off-site at a legal site in accordance with all applicable federal, state, and local laws and regulations.
 - a. Removed vegetation will not be allowed to remain in piles or mounds on the easement or surrounding property.
7. Handle materials in a controlled manner with as few handlings as possible.
8. Thoroughly clean, sweep, wash and polish all Work and equipment associated with this project.
9. Remove all signs of temporary construction and activities incidental to construction of required permanent Work.
10. If project is not cleaned to the satisfaction of the City, the City reserves the right to have the cleaning completed at the expense of the Contractor.
11. Do not burn on-site.

B. Intermediate Cleaning during Construction

1. Keep Work areas clean so as not to hinder health, safety or convenience of personnel in existing facility operations.
2. At maximum weekly intervals, dispose of waste materials, debris and rubbish.
3. Confine construction debris daily in strategically located container(s):
 - a. Cover to prevent blowing by wind
 - b. Store debris away from construction or operational activities
 - c. Haul from site at a minimum of once per week
4. Vacuum clean interior areas when ready to receive finish painting.
 - a. Continue vacuum cleaning on an as-needed basis, until Final Acceptance.
5. Prior to storm events, thoroughly clean site of all loose or unsecured items, which may become airborne or transported by flowing water during the storm.

C. Interior Final Cleaning

1. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels and other foreign materials from sight-exposed surfaces.
2. Wipe all lighting fixture reflectors, lenses, lamps and trims clean.
3. Wash and shine glazing and mirrors.
4. Polish glossy surfaces to a clear shine.
5. Ventilating systems
 - a. Clean permanent filters and replace disposable filters if units were operated during construction.
 - b. Clean ducts, blowers and coils if units were operated without filters during construction.
6. Replace all burned out lamps.
7. Broom clean process area floors.
8. Mop office and control room floors.

D. Exterior (Site or Right of Way) Final Cleaning

1. Remove trash and debris containers from site.
 - a. Re-seed areas disturbed by location of trash and debris containers.
2. Sweep roadway to remove all rocks, pieces of asphalt, concrete or any other object that may hinder or disrupt the flow of traffic along the roadway.

- 1 3. Clean any interior areas including, but not limited to, vaults, manholes, structures,
- 2 junction boxes and inlets.
- 3 4. If no longer required for maintenance of erosion facilities, and upon approval by
- 4 City, remove erosion control from site.
- 5 5. Clean signs, lights, signals, etc.

6 **3.11 CLOSEOUT ACTIVITIES [NOT USED]**

7 **3.12 PROTECTION [NOT USED]**

8 **3.13 MAINTENANCE [NOT USED]**

9 **3.14 ATTACHMENTS [NOT USED]**

10 **END OF SECTION**

11

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

12

SECTION 01 77 19
CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. The procedure for closing out a contract
- B. Deviations from this City of Denton Standard Specification
 - 1. None.
- C. Related Specification Sections include, but are not necessarily limited to:
 - 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
 - 2. Division 1 – General Requirements
 - 3. Section 33 01 30 – Post Construction Closed Circuit Television (CCTV) Inspection

1.2 PRICE AND PAYMENT PROCEDURES

- A. Measurement and Payment
 - 1. Work associated with this Item is considered incidental to the various Items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Guarantees, Bonds and Affidavits
 - 1. No application for final payment will be accepted until all guarantees, bonds, certificates, licenses and affidavits required for Work or equipment as specified are satisfactorily filed with the City.
- B. Release of Liens or Claims
 - 1. No application for final payment will be accepted until satisfactory evidence of release of liens has been submitted to the City.

1.5 SUBMITTALS

- A. Submit all required documentation to Project Manager.

1.6 INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

PART 2 - PRODUCTS [NOT USED]

1 **PART 3 - EXECUTION**

2 **3.1 INSTALLERS [NOT USED]**

3 **3.2 EXAMINATION [NOT USED]**

4 **3.3 PREPARATION [NOT USED]**

5 **3.4 CLOSEOUT PROCEDURE**

6 A. Prior to requesting Final Inspection, submit:

- 7 1. Project Record Documents in accordance with Section 01 78 39
8 2. Operation and Maintenance Data, if required, in accordance with Section 01 78 23

9 B. Prior to requesting Final Inspection, perform final cleaning in accordance with Section
10 01 74 23.

11 C. Final Inspection

- 12 1. After final cleaning, provide notice to the Project Manager and their duly appointed
13 representative that the Work is completed.
14 a. City reserves the right to deny request for Final Inspection if City determines
15 that the entire Work is not sufficiently complete to warrant a Final Inspection
16 b. The City will make an initial Final Inspection with the Contractor present.
17 c. Upon completion of this inspection, the City will notify the Contractor, in
18 writing within 10 business days, of any particulars in which this inspection
19 reveals that the Work is defective or incomplete.
20 2. Upon receiving written notice from the City, immediately undertake the Work
21 required to remedy deficiencies and complete the Work to the satisfaction of the
22 City.
23 3. Upon completion of Work associated with the items listed in the City's written
24 notice, inform the City, that the required Work has been completed. Upon receipt
25 of this notice, the City, in the presence of the Contractor, will make a subsequent
26 Final Inspection of the project.
27 4. Provide all special accessories required to place each item of equipment in full
28 operation. These special accessory items include, but are not limited to:
29 a. Specified spare parts
30 b. Adequate oil and grease as required for the first lubrication of the equipment
31 c. Initial fill up of all chemical tanks and fuel tanks
32 d. Light bulbs
33 e. Fuses
34 f. Vault keys
35 g. Handwheels
36 h. Other expendable items as required for initial start-up and operation of all
37 equipment

38 D. Supporting Documentation

- 39 1. Coordinate with the City Project Representative to complete the following
40 additional forms:
41 a. Final Payment Request
42 b. Statement of Contract Time
43 c. Affidavit of Payment and Release of Liens

- 1 d. Consent of Surety to Final Payment
- 2 E. Letter of Final Acceptance
- 3 1. When City has deemed the Work has been completed, and upon receiving all
- 4 Supporting Documentation, in accordance with General Conditions, City will issue
- 5 Letter of Final Acceptance and release the final payment request for payment.
- 6 F. Warranty Inspection for Wastewater Mains
- 7 1. A second television inspection conforming to the standards laid out in Section 33
- 8 01 30 shall be started by the Contractor no sooner than 630 calendar days and
- 9 finished no later than 690 calendar days after the date of issuance of the Letter of
- 10 Final Acceptance for the project by the City of Denton.
- 11 2. The second inspection shall include a complete televised inspection of each
- 12 manhole interior constructed or installed on the project (including cored manholes).
- 13 a. Should the second inspection indicate repairs that need to be made, these will
- 14 be performed by the Contractor at no cost to the City.
- 15 3. Failure of the Contractor to perform the second inspection or to make repairs
- 16 indicated by the second inspection shall be sufficient grounds for the City to take
- 17 action through the terms of the Maintenance Bond for the project to perform the
- 18 second inspection and make any repairs indicated.

- 19 **3.5 REPAIR / RESTORATION [NOT USED]**
- 20 **3.6 RE-INSTALLATION [NOT USED]**
- 21 **3.7 FIELD [OR] SITE QUALITY CONTROL [NOT USED]**
- 22 **3.8 SYSTEM STARTUP [NOT USED]**
- 23 **3.9 ADJUSTING [NOT USED]**
- 24 **3.10 CLEANING [NOT USED]**
- 25 **3.11 CLOSEOUT ACTIVITIES [NOT USED]**
- 26 **3.12 PROTECTION [NOT USED]**
- 27 **3.13 MAINTENANCE [NOT USED]**
- 28 **3.14 ATTACHMENTS [NOT USED]**

29 **END OF SECTION**

30

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

31

1 SECTION 01 78 23
2 OPERATION AND MAINTENANCE DATA

3 PART 1 - GENERAL

4 1.1 SUMMARY

5 A. Section Includes:

- 6 1. Product data and related information appropriate for City's maintenance and**
7 operation of products furnished under Contract
- 8 2. Such products may include, but are not limited to:**
 - 9 a. Traffic Controllers**
 - 10 b. Irrigation Controllers (to be operated by the City)**
 - 11 c. Butterfly Valves**

12 B. Deviations from this City of Denton Standard Specification

- 13 1. None.**

14 C. Related Specification Sections include, but are not necessarily limited to:

- 15 1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract**
- 16 2. Division 1 – General Requirements**

17 1.2 PRICE AND PAYMENT PROCEDURES

18 A. Measurement and Payment

- 19 1. Work associated with this Item is considered incidental to the various Items bid.**
20 No separate payment will be allowed for this Item.

21 1.3 REFERENCES [NOT USED]

22 1.4 ADMINISTRATIVE REQUIREMENTS

23 A. Schedule

- 24 1. Submit manuals in final form to the City within 30 calendar days of product**
25 shipment to the project site.

26 1.5 SUBMITTALS

- 27 A. Submittals shall be in accordance with Section 01 33 00. All submittals shall be**
28 approved by the City prior to delivery.

29 1.6 INFORMATIONAL SUBMITTALS

30 A. Submittal Form

- 31 1. Prepare data in form of an instructional manual for use by City personnel.**
- 32 2. Format**
 - 33 a. Size: 8 ½ inches x 11 inches**
 - 34 b. Paper**
 - 35 1) 40 pound minimum, white, for typed pages**
 - 36 2) Holes reinforced with plastic, cloth or metal**
 - 37 c. Text: Manufacturer's printed data, or neatly typewritten**

d. Drawings

- 1) Provide reinforced punched binder tab, bind in with text
- 2) Reduce larger drawings and fold to size of text pages.

e. Provide fly-leaf for each separate product, or each piece of operating equipment.

- 1) Provide typed description of product, and major component parts of equipment.
- 2) Provide indexed tabs.

f. Cover

- 1) Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS".

2) List:

- a) Title of Project
- b) Identity of separate structure as applicable
- c) Identity of general subject matter covered in the manual

3. Binders

- a. Commercial quality 3-ring binders with durable and cleanable plastic covers
- b. When multiple binders are used, correlate the data into related consistent groupings.

4. Provide an electronic form of the O&M Manual.

B. Manual Content

1. Neatly typewritten table of contents for each volume, arranged in systematic order

- a. Contractor, name of responsible principal, address and telephone number
- b. A list of each product required to be included, indexed to content of the volume
- c. List, with each product:
 - 1) The name, address and telephone number of the subcontractor or installer
 - 2) A list of each product required to be included, indexed to content of the volume
 - 3) Identify area of responsibility of each
 - 4) Local source of supply for parts and replacement

d. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

2. Product Data

- a. Include only those sheets which are pertinent to the specific product.
- b. Annotate each sheet to:
 - 1) Clearly identify specific product or part installed
 - 2) Clearly identify data applicable to installation
 - 3) Delete references to inapplicable information

3. Drawings

- a. Supplement product data with drawings as necessary to clearly illustrate:
 - 1) Relations of component parts of equipment and systems
 - 2) Control and flow diagrams
- b. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
- c. Do not use Project Record Drawings as maintenance drawings.

4. Written text, as required to supplement product data for the particular installation:

- a. Organize in consistent format under separate headings for different procedures.
- b. Provide logical sequence of instructions of each procedure.

- 1 5. Copy of each warranty, bond and service contract issued
- 2 a. Provide information sheet for City personnel giving:
- 3 1) Proper procedures in event of failure
- 4 2) Instances which might affect validity of warranties or bonds
- 5 C. Manual for Materials and Finishes
- 6 1. Submit 5 hard copies and 1 digital copy of complete manual in final form.
- 7 2. Content, for architectural products, applied materials and finishes:
- 8 a. Manufacturer's data, giving full information on products
- 9 1) Catalog number, size, composition
- 10 2) Color and texture designations
- 11 3) Information required for reordering special manufactured products
- 12 b. Instructions for care and maintenance
- 13 1) Manufacturer's recommendation for types of cleaning agents and methods
- 14 2) Cautions against cleaning agents and methods which are detrimental to
- 15 product
- 16 3) Recommended schedule for cleaning and maintenance
- 17 3. Content, for moisture protection and weather exposure products:
- 18 a. Manufacturer's data, giving full information on products
- 19 1) Applicable standards
- 20 2) Chemical composition
- 21 3) Details of installation
- 22 b. Instructions for inspection, maintenance and repair
- 23 D. Manual for Equipment and Systems
- 24 1. Submit 5 hard copies and 1 digital copy of complete manual in final form.
- 25 2. Content, for each unit of equipment and system, as appropriate:
- 26 a. Description of unit and component parts
- 27 1) Function, normal operating characteristics and limiting conditions
- 28 2) Performance curves, engineering data and tests
- 29 3) Complete nomenclature and commercial number of replaceable parts
- 30 b. Operating procedures
- 31 1) Start-up, break-in, routine and normal operating instructions
- 32 2) Regulation, control, stopping, shut-down and emergency instructions
- 33 3) Summer and winter operating instructions
- 34 4) Special operating instructions
- 35 c. Maintenance procedures
- 36 1) Routine operations
- 37 2) Guide to "trouble shooting"
- 38 3) Disassembly, repair and reassembly
- 39 4) Alignment, adjusting and checking
- 40 d. Servicing and lubrication schedule
- 41 1) List of lubricants required
- 42 e. Manufacturer's printed operating and maintenance instructions
- 43 f. Description of sequence of operation by control manufacturer
- 44 1) Predicted life of parts subject to wear
- 45 2) Items recommended to be stocked as spare parts
- 46 g. As installed control diagrams by controls manufacturer
- 47 h. Each contractor's coordination drawings
- 48 1) As installed color coded piping diagrams

- 1 i. Charts of valve tag numbers, with location and function of each valve
- 2 j. List of original manufacturer's spare parts, manufacturer's current prices, and
- 3 recommended quantities to be maintained in storage
- 4 k. Other data as required under pertinent Sections of Specifications
- 5 3. Content, for each electric and electronic system, as appropriate:
- 6 a. Description of system and component parts
- 7 1) Function, normal operating characteristics, and limiting conditions
- 8 2) Performance curves, engineering data and tests
- 9 3) Complete nomenclature and commercial number of replaceable parts
- 10 b. Circuit directories of panelboards
- 11 1) Electrical service
- 12 2) Controls
- 13 3) Communications
- 14 c. As installed color coded wiring diagrams
- 15 d. Operating procedures
- 16 1) Routine and normal operating instructions
- 17 2) Sequences required
- 18 3) Special operating instructions
- 19 e. Maintenance procedures
- 20 1) Routine operations
- 21 2) Guide to "trouble shooting"
- 22 3) Disassembly, repair and reassembly
- 23 4) Adjustment and checking
- 24 f. Manufacturer's printed operating and maintenance instructions
- 25 g. List of original manufacturer's spare parts, manufacturer's current prices, and
- 26 recommended quantities to be maintained in storage
- 27 h. Other data as required under pertinent Sections of Specifications
- 28 4. Prepare and include additional data when the need for such data becomes apparent
- 29 during instruction of City's personnel.

30 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

31 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

32 **1.9 QUALITY ASSURANCE**

- 33 A. Provide operation and maintenance data by personnel with the following criteria:
- 34 1. Trained and experienced in maintenance and operation of described products
- 35 2. Skilled as technical writer to the extent required to communicate essential data
- 36 3. Skilled as draftsman competent to prepare required drawings

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Work associated with the documenting the project and recording changes to project documents, including:
 - a. Record Drawings

B. Deviations from this City of Denton Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
2. Division 1 – General Requirements

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Work associated with this Item is considered incidental to the various Items bid.
No separate payment will be allowed for this Item.

1.3 REFERENCES [NOT USED]

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

1.5 SUBMITTALS

- A. Prior to submitting a request for Final Inspection, deliver Project Record Documents to Project Manager.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

A. Accuracy of Records

1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show the change properly.
2. Accuracy of records shall be such that future search for items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Documents.
3. To facilitate accuracy of records, make entries within 24 hours after receipt of information that the change has occurred.

4. Provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation and examination.

1.10 STORAGE AND HANDLING

A. Storage and Handling Requirements

1. Maintain the job set of Record Documents, which shall include the Drawings and the Project Manual, completely protected from deterioration and from loss and damage until completion of the Work and transfer of all recorded data to the final Project Record Documents.
2. In the event of loss of recorded data, use means necessary to again secure the data to the City's approval.
 - a. In such case, provide replacements to the standards originally required by the Contract Documents.

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS

2.1 OWNER-FURNISHED [OR] OWNER-SUPPLIED PRODUCTS [NOT USED]

2.2 RECORD DOCUMENTS

A. Job set

1. Promptly following receipt of the Notice to Proceed, secure from the City, at no charge to the Contractor, 1 complete set of all Documents comprising the Contract.

B. Final Record Documents

1. At a time nearing the completion of the Work and prior to Final Inspection, provide the City 1 complete set of all Final Record Drawings in the Contract.

2.3 ACCESSORIES [NOT USED]

2.4 SOURCE QUALITY CONTROL [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION [NOT USED]

3.4 MAINTENANCE DOCUMENTS

A. Maintenance of Job Set

1. Immediately upon receipt of the job set, identify each of the Documents with the title, "RECORD DOCUMENTS - JOB SET". The Job set shall include the Drawings and the Project Manual.

2. Preservation

- a. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set.
- b. Do not use the job set for any purpose except entry of new data and for review by the City, until start of transfer of data to final Project Record Documents.
- c. Maintain the job set at the site of work.

3. Coordination with Construction Survey

- a. At a minimum, in accordance with the intervals set forth in Section 01 71 23, clearly mark any deviations from Contract Documents associated with installation of the infrastructure.

4. Making entries on Drawings and Specifications

- a. Record any deviations from Contract Documents on Drawings and in the Specifications if applicable.
- b. Use an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required.
- c. Date all entries.
- d. Call attention to the entry by a "cloud" drawn around the area or areas affected.
- e. In the event of overlapping changes, use different colors for the overlapping changes.

5. Conversion of schematic layouts

- a. In some cases on the Drawings, arrangements of conduits, circuits, piping, ducts, and similar items, are shown schematically and are not intended to portray precise physical layout.
 - 1) Final physical arrangement is determined by the Contractor, subject to the City's approval.
 - 2) However, design of future modifications of the facility may require accurate information as to the final physical layout of items which are shown only schematically on the Drawings.
- b. Show on the job set of Record Drawings, by dimension accurate to within 1 inch, the centerline of each run of items.
 - 1) Final physical arrangement is determined by the Contractor, subject to the City's approval.
 - 2) Show, by symbol or note, the vertical location of the Item ("under slab", "in ceiling plenum", "exposed", and the like).
 - 3) Make all identification sufficiently descriptive that it may be related reliably to the Specifications.
- c. The City may waive the requirements for conversion of schematic layouts where, in the City's judgment, conversion serves no useful purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the City.

B. Final Project Record Documents

1. Transfer of data to Drawings and Specifications

- a. Carefully transfer change data shown on the job set of Record Drawings and Project Manual if applicable, to the corresponding final documents, coordinating the changes as required.

- b. Clearly indicate at each affected detail and other Drawing a full description of changes made during construction, and the actual location of items.
- c. Call attention to each entry by drawing a "cloud" around the area or areas affected.
- d. Make changes neatly, consistently and with the proper media to assure longevity and clear reproduction.
- e. Provide GPS coordinates for all underground utility appurtenances, bends, fittings, valves, manholes, junction boxes or other structures. This requirement shall encompass all water, sanitary sewer, or drainage improvements.
- f. Record Drawing documents shall be submitted in an electronic format (.pdf).

2. Transfer of data to other Documents

- a. If the Documents, other than Drawings, have been kept clean during progress of the Work, and if entries thereon have been orderly to the approval of the City, the job set of those Documents, other than Drawings, will be accepted as final Record Documents.
- b. If any such Document is not so approved by the City, secure a new copy of that Document from the City at the City's usual charge for reproduction and handling, and carefully transfer the change data to the new copy to the approval of the City.

3.5 REPAIR / RESTORATION [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD [OR] SITE QUALITY CONTROL [NOT USED]

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
6/14/2024		Added GPS and electronic format requirements to Record Drawings under 3.4.B.

SECTION 03 00 00
CONCRETE AND CONCRETE REINFORCING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Material requirements for concrete and concrete reinforcing.

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.
3. Section 03 30 00 – Cast-in-Place Concrete
4. Section 03 80 00 – Modifications to Existing Concrete Structures
5. Section 31 37 00 – Riprap
6. Section 32 05 16 – Aggregates for Exterior Improvements
7. Section 32 13 13 – Concrete Paving
8. Section 32 13 16 – Decorative Concrete Paving
9. Section 32 16 00 – Curbs, Gutters, Sidewalks, and Driveways
10. Section 32 32 00 – Retaining Walls
11. Section 33 05 61 – Cast-in-Place Concrete Manholes
12. Section 33 42 11 – Stormwater Pipe and Boxes
13. Section 33 42 23 – Stormwater Headwalls, Wingwalls, and End Treatments
14. Section 33 42 30 – Stormwater Junction Boxes
15. Section 33 42 33 – Stormwater Curb Inlets and Area Drains
16. Section 41 14 00 – Batching Equipment

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Measurement

- a. Concrete and concrete reinforcing materials, equipment, tools, testing, and incidentals are subsidiary to the installation of various items.

2. Payment

- a. The work performed and materials furnished in accordance with this item are subsidiary to the unit prices bid for various items which require the use of concrete and concrete reinforcing, and will not be measured or paid for separately.

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.
2. American Concrete Institute (ACI):
 - a. 211, Proportioning of Concrete Mixes
 - b. 301, Specifications for Structural Concrete
 - c. 318, Building Code Requirements for Structural Concrete
3. ASTM International (ASTM):
 - a. A36, Standard Specification for Carbon Structural Steel
 - b. A615, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
 - c. A675, Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties
 - d. A955, Standard Specification for Deformed and Plain Stainless Steel Bars for Concrete Reinforcement
 - e. A996, Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
 - f. A1064, Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
 - g. C33, Standard Specification for Concrete Aggregates
 - h. C94, Standard Specification for Ready-Mixed Concrete
 - i. C150, Standard Specification for Portland Cement
 - j. C260, Standard Specification for Air-Entraining Admixtures for Concrete
 - k. C494, Standard Specification for Chemical Admixtures for Concrete
 - l. C595, Standard Specification for Blended Hydraulic Cements
 - m. C1116, Standard Specification for Fiber-Reinforced Concrete
 - n. C1399, Standard Test Method for Obtaining Average Residual-Strength of Fiber-Reinforced Concrete
4. Texas Department of Transportation (TxDOT) Departmental Material Specifications (DMS)
 - a. DMS-4515, Multiple Piece Tie Bars for Concrete Pavements
 - b. DMS-4550, Fibers for Concrete
 - c. DMS-4600, Hydraulic Cement
 - d. DMS-4610, Fly Ash
 - e. DMS-4640, Chemical Admixtures for Concrete
 - f. DMS-4650, Hydraulic Cement Concrete Curing Materials and Evaporation Retardants
 - g. DMS-6100, Epoxies and Adhesives
5. TxDOT Test Procedures:
 - a. Tex-401-A, Sieve Analysis of Fine and Coarse Aggregate
 - b. Tex-409-A, Free Moisture and Water Absorption in Aggregate for Concrete
 - c. Tex-470-A, Optimized Aggregate Gradation for Hydraulic Cement Concrete Mix Designs
 - d. Tex-425-A, Determining Moisture Content in Fine Aggregate by the "Speedy" Moisture Method

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]**1.5 SUBMITTALS**

A. Submittals shall be in accordance with Section 01 33 00.

B. All submittals shall be approved by the City prior to delivery.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS**A. Shop Drawing**

1. Concrete Mix Design – Submit a design of the concrete mix at least 4 weeks prior to the start of construction activities requiring concrete unless approved otherwise by the City. Provide the mix design in accordance with the class of concrete or concrete mix design specified in the Drawings including:

- a. Concrete Material Source Information

- 1) Concrete supplier name
- 2) Project name and address
- 3) Contractor name
- 4) Mixture Identification Number

- b. Design Requirements and Design Summary Including:

- 1) The combined aggregate gradation, source, and material testing results in accordance with Section 32 05 16.
- 2) Maximum slump
- 3) Concrete intended use (sidewalk, roadway, etc) and class designation
- 4) Design water to cement (w/c) ratio
- 5) Design Target Strength
- 6) 7-Day and 28-Day compressive strengths in accordance with ACI 301 and 318
- 7) Batch weights, specific gravity, and type/class information for:
 - a) Cement
 - b) Supplementary cementing materials (if used)
 - c) Coarse Aggregate
 - d) Fine Aggregate
 - e) Water
- 8) Chemical admixtures – Type and amount used
- 9) Product Data for all chemical admixtures, cement, and fly ash used.

- c. Statement from the concrete supplier verifying concrete has been tested and handled in accordance with ASTM C94.

2. Product Data

- a. Provide electronic product data from each manufacturer that is supplying curing compounds, evaporation retardant, joint fillers, or chemical additives to be used on the project.
- b. Product data sheets for all products other than epoxy to include:
 - 1) Manufacturer name
 - 2) Date
 - 3) Material description
 - 4) Point of delivery
 - 5) Data and test results as required in this Section

- 6) Material Safety Data Sheets (if applicable, required for Epoxy and Curing Compounds)
- 7) Manufacturer Recommended Storing Data (if applicable)
- 8) Application Recommendations (if applicable)
- 9) Manufacturer's Recommended Storage and Handling instructions
- c. Epoxy Product Data Sheet Additional Requirements:
 - 1) Resin or hardener components
 - 2) Brand name
 - 3) Name of manufacturer
 - 4) Lot or batch number
 - 5) Temperature range for storage
 - 6) Date of manufacture
 - 7) Expiration date
 - 8) Quantity contained
- d. Fiber Reinforcing Submittal Requirements
 - 1) Product data sheet
 - 2) Letter of certification stating compliance with the requirements of this Section and other applicable standards.
 - 3) Report that provides test results for Fiber Testing in accordance with DMS-4550, Fibers for Concrete
 - 4) Delivery, storage, and handling instructions
 - 5) Dosage requirements to provide concrete reinforcing in accordance with the requirements of this Section and any other applicable related Sections.
 - 6) Installation and mixing instructions
 - 7) Provide the City with test results in accordance with this Section and DMS-4550, Fibers for Concrete.

B. Informational Submittals

1. Source Locations

- a. Provide the location of all material sources

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING

A. Storage and Handling Requirements

1. Secure and maintain a location to store the material in accordance with Section 01 66 00.

B. Storage and Stockpiling

1. Cement and Supplementary Cementitious Material (SCM)
 - a. Store all cement and SCM in weatherproof enclosures to protect them from dampness or absorption of moisture.
2. Steel Reinforcement
 - a. Store reinforcement above ground surface on skids, platforms, or other support.
 - b. Protect reinforcement from mechanical damage and surface deterioration caused by exposure to conditions that could cause rust.

1.11 FIELD CONDITIONS [NOT USED]**1.12 WARRANTY [NOT USED]****PART 2 - PRODUCTS****2.1 CITY-SUPPLIED PRODUCTS [NOT USED]****2.2 MATERIALS****A. Concrete Production Materials****1. Cementitious Material**

a. Defined as the cement and supplementary cementing materials used in concrete.

b. Cement

1) Furnish cement Type I, II, or I/II in accordance with ASTM C150 Portland Cement or Type IL in accordance with ASTM C595.

2) Provide cement from sources that are in accordance with DMS-4600 and listed on TxDOT's Material Producer List (MPL) entitled "Hydraulic Cement".

c. Supplementary Cementing Materials (SCM)**1) Fly Ash**

a) Refer to DMS - 4610 for types of Fly Ash

b) Acceptable Fly Ash includes:

(1) Class C and Class F

(2) Ultra-Fine (UFFA)

(3) Modified Class F (MFFA)

c) Provide fly ash in accordance with DMS-4610 and from sources listed on TxDOT's MPL entitled "Fly Ash".

d) Refer to Table 2 for Concrete Classes and Mix Design Options.

2) Other SCMs

a) No other SCM will be approved for use.

2. Water

a. Provide mixing water and curing water free from oils, acids, organic matter, or other deleterious substances.

b. Provide water from municipal supplies approved by the Texas Department of Health.

c. Obtain approval from the City if using water not approved by the Texas Department of Health prior to construction.

1) If approved to use water from a non-pre-approved source, water testing may be required. The City will request tests and provide minimum criteria.

3. Aggregate**a. General**

1) Recycled crushed concrete pavement may be used as coarse or fine aggregate in Class A, B, E, and P concrete.

2) A maximum of 20 percent of the fine aggregate may consist of recycled crushed concrete pavement.

b. Fine aggregate

1) In accordance with Section 32 05 16

c. Coarse Aggregates

- 1) Provide coarse aggregate consisting of clean, tough, durable fragments in accordance with Section 32 05 16.
- 2) Provide coarse aggregates that meet the gradation shown in Table 1 when tested in accordance with Tex-401-A.
- 3) Select aggregate gradation based on the allowable grade for the appropriate concrete class shown in shown in Table 1.

Table 1
Coarse Aggregate Gradation Chart

Aggregate Grade No. ¹	Maximum Nominal Size	Percent Passing on Each Sieve								
		2-1/2"	2"	1-1/2"	1"	3/4"	1/2"	3/8"	#4	#8
1	2"	100	80-100	50-85		20-40			0-5	
2(467)	1-1/2"		100	95-100		35-70		10-30	0-5	
3	1-1/2"		100	95-100		60-90	25-60		0-5	
4 (57)	1"			100	95-100		25-60		0-10	0-5
5 (67)	3/4"				100	90-100		20-55	0-10	0-5
6 (7)	1/2"					100	90-100	40-70	0-15	0-5
7	3/8"						100	70-95	0-25	
8	3/8"						100	95-100	20-65	0-10

1. Corresponding ASTM C33 gradation shown in parentheses

4. Chemical Admixtures

a. General

- 1) Only water reducing and air-entraining admixtures are allowed.
- 2) Provide admixtures in accordance with DMS-4640, Chemical Admixtures for concrete.
- 3) Do not use Type C, E, F, or G admixtures in Class S bridge deck concrete.
- 4) Do not use chemical admixtures containing calcium chloride in any concrete.

b. Water Reducing Admixture

- 1) Provide water-reducing admixtures in accordance with ASTM C494. Types A, D, F, and G will be allowed.
 - a) ASTM C494, Types "A" and "F":
 - (1) Improves quality of concrete at lower cement content
 - (2) Increase slump without increasing water-cement ratio
 - b) ASTM C494, Types "D" and "G":
 - (1) Maintains workability during hot weather placement

c. Air-Entraining Admixture

- 1) Provide air-entraining admixtures in accordance with ASTM C260.

- 2) Maintain a total air content between 3 and 7 percent.
- 3) Do not exceed the manufacturer's recommended dosage.

B. Concrete Placement Materials

1. Reinforcing Steel

- a. Provide type, size, grade, and quantity of steel reinforcement as specified in the Drawings.
- b. Provide Grade 60 or above steel bar reinforcing unless otherwise indicated in the Drawings.
- c. Provide reinforcement free from dirt, loose rust, painting, oil, or other foreign material.
- d. Provide corrosion protection if specified in the Drawings.
- e. Provide deformed reinforcing steel in accordance with one of the following:
 - 1) New Billet Steel in accordance with ASTM A615, Grades 60, 75, or 80
 - 2) Axle Steel in accordance with ASTM A996, Type A, Grade 60
 - a) Provide as straight bars only and do not bend them.
 - 3) Rail Steel in accordance with ASTM A996 Type R, Grade 60.
 - a) Rail steel only allowed in concrete pavement. Provide as straight bars only and do not bend them.
- f. Provide bars in accordance with the size and weight requirements for reinforcing in ASTM A615.
- g. Twisted bars are not considered deformed and will not be accepted by the City.
- h. Steel Wire Reinforcement will not be accepted by the City.
- i. Spiral Reinforcement
 - 1) Provide smooth or deformed wire conforming to ASTM A1064.
 - 2) Provide bars in accordance with ASTM A615, ASTM A996 Type A, or ASTM A675 Grade 80 meeting dimensional requirements of ASTM A615.
- j. Bending
 - 1) Bend all bars cold in a shape true to the shapes specified in the Drawings.
 - 2) Bend all bars used for stirrups and ties around a pin having a diameter at least two times the minimum thickness of the bar.
 - 3) Perform all other bends in accordance with the latest code of Standard Practice of Reinforcing Steel Institute.
 - 4) Bend stainless reinforcing steel in accordance with ASTM A955.

2. Fiber Reinforcing.

- a. General
 - 1) Fiber reinforcement is only allowed if specified on the Drawings by the Engineer of record with written approval from the City. Do not use for structures or roadway paving.
- b. Material
 - 1) Provide fibers in accordance with ASTM C1116, including alkali-proof, non-absorptive synthetic fibers, resistant to deterioration due to long-term exposure to moisture or substances present in admixtures, and do not contribute to nor interfere with the air entrainment of the concrete.
 - 2) Provide macrosynthetic fibers for reinforcing. Do not use natural, steel, glass, or any other type without prior approval by the City.

- 3) Provide fibers that meet a minimum average residual strength of 115 psi when tested in accordance with ASTM C1399 with the following modifications:
- a) Initial deflection for the initial crack of 0.02000 inches.
 - b) Sample tolerance of average residual strength not below 10 percent of the specified required value.
- c. Length and Size
- 1) Provide fibers maximum 1.5 inches in length.
- d. Testing
- 1) The use of fiber reinforcing does not change the strength or fresh concrete requirements per this specification.
- e. Rejection
- 1) Any concrete installed with fiber reinforcing that is non-compliant with the requirements of this Section or other applicable related Sections will be removed and replaced at no cost to the City.
3. Tie Bars
- a. Refer to pertinent Sections and City standard details for specific uses and installation requirements for Multiple Piece Tie Bars and Single Piece Tie Bars.
 - b. Install bars in accordance with the size, type, and location specified in the Drawings.
 - c. Provide straight deformed steel tie bars in accordance with ASTM A615.
 - d. Install tie bars per the size and spacing specified in the Drawings.
 - e. Do not bend or use bent tie bars. Tie bars should remain straight.
 - f. Multiple Piece Tie Bars
 - 1) Provide multiple piece tie bars in accordance with DMS-4515, Multiple Piece Tie Bars for Concrete Pavements.
4. Dowel Bars
- a. General
 - 1) Install bars in accordance with the size, type, and location shown on the Drawings.
 - 2) Refer to pertinent Sections and City standard details for uses and installation requirements.
 - b. Dowel Bars
 - 1) Provide smooth, straight dowel bars free of burrs with a yield strength of at least 60 kilo-pound per square inch (ksi) as specified in the Drawings.
 - 2) Provide steel in accordance with ASTM A615 or meet the physical requirements of ASTM A36 for smooth bars that are larger than 3/8 inch in diameter.
 - 3) Coat dowels with a thin film of grease, wax, silicone, or other approved debonding material.
 - 4) Designate smooth bars by diameter in inches.
 - c. Dowel Caps
 - 1) Provide dowel caps on the lubricated end of each dowel bar used in an expansion joint.
 - 2) Provide dowel caps filled with a soft compressible material with enough range of movement to allow complete closure of expansion joint.

- 3) Provide dowel caps to the length specified in the Drawings. The cap should have sufficient length to allow at least a 1.25-inch gap between the end of the bar and the edge of the cap.
- 4) Provide caps for dowel bars with an internal diameter sufficient to permit the cap to freely slip over the bar, but do not have an internal diameter that exceeds the bar diameter by more 1/8 inch.

5. Reinforcement Supporting Devices

- a. Use reinforcement supporting devices for construction of sidewalks, driveways, roadways, crosswalks, and any other concrete paving operation.
- b. Provide positioning and supporting devices (baskets and chairs) capable of securing and holding the reinforcing steel in proper position before and during paving.
- c. Do not allow construction personnel to walk on the reinforcement bars. Replace any broken chairs prior to concrete placement.
- d. Provide supporting devices (baskets and chairs) made of plastic or non-rusting metal.
 - 1) Supporting devices to show no visible indications of deterioration after immersion in a 5-percent solution of sodium hydroxide for 120-hours.
 - 2) Provide the City with test results or product data sheets proving devices are in accordance with the requirements of this Section if requested.

6. Epoxy

- a. Provide Type 3, Class C epoxy in accordance with DMS-6100.
- b. City to approve all epoxy and adhesive products prior to use. Submit a Product Data Sheet in accordance with this Section.
- c. Do not use damaged or previously opened containers.
- d. Do not use any material showing evidence of crystallization, lumps, skinning, extreme thickening, or settling of pigments that cannot be readily dispersed with normal agitation.
- e. Follow sound environmental practices when disposing of epoxy and adhesive wastes.
- f. Dispose of all empty containers separately. Completely empty and mix the epoxy before disposal.

7. Evaporation Retardant

- a. Provide evaporation retardant in accordance with DMS-4650.

8. Curing

- a. The use of mats, plastic, or film to be approved by the City prior to use.
- b. Provide membrane curing compounds in accordance with this specification and DMS-4650.
 - 1) Provide curing material in accordance with the requirements of DMS-4650 unless otherwise specified in the Drawings or by the City.
 - 2) Provide a curing compound that does not react deleteriously with concrete or its compounds.
 - 3) Curing compound to produce a firm, continuous uniform moisture-impermeable film free from pinholes and adhere to surface of damp concrete.
 - 4) The City may reject any concrete not cured properly due to improperly applied curing compound or faulty materials.
 - 5) The City may reject the curing compound based on visual or odor defects.

- 6) Curing compound to be delivered to the job site in the manufacturer's original containers only, with original label containing the following:
 - a) Manufacturer's name
 - b) Trade name of the material
 - c) Batch number or symbol with which test samples may be correlated

C. Concrete Mix Design

1. General

- a. Furnish mix designs using ACI 211 or Tex-470-A.
- b. Maintain mix design and maximum water to cement ratio once mix design is approved by City.
- c. Do not place concrete until the mix design has been approved by the City. The City may require any concrete placed prior to approval to be removed and replaced at no cost to the City.
- d. Perform mix design proportioning by absolute volume method unless otherwise approved.
- e. Perform cement replacement using equivalent weight method unless otherwise approved.
- f. Do not exceed specified water to cement ratios listed in Table 2 for concrete classes when designing the mixture.
- g. Provide a mix design after the trial batch tests are complete in accordance with the requirements in this Section.

2. Cementitious Material

- a. Do not exceed 700 pounds of cementitious material per cubic yard of concrete unless otherwise specified or approved by the City.
- b. Use cement of the same type and from the same source for monolithic placements.

3. Concrete Classes

a. General

- 1) Provide concrete mix designs in accordance with the requirements shown in Table 2 for the class of concrete specified in the Drawings.
- 2) Refer to the Drawings and the General Usage column on Table 2 for concrete class information.
- 3) For concrete classes not specified in Table 2 refer to the Drawings or special project specifications for concrete mix design requirements.

b. Class P Concrete

- 1) Use air entraining admixture.
- 2) Class P1 Concrete
 - a) Use Class P1 concrete for machine paved concrete roadways and alleyways unless otherwise specified in the Drawings or directed by City.
- 3) Class P2 Concrete
 - a) Provide Class P2 concrete for hand poured concrete roadways, driveways, alleyways, and all other hand poured, vehicular trafficked concrete pavement unless otherwise specified in the Drawings.

c. High Early Strength Concrete (HES)

- 1) Use air entraining admixture.
- 2) Provide HES concrete in accordance with the requirements of Table 2.
- 3) Use HES concrete only when specified in the Drawings or when directed by City.

- 1 4) HES may be approved for use when a roadway or driveway needs to be
- 2 opened to traffic quickly.
- 3 5) Perform tests at 24 hours to verify compressive strength of HES concrete is
- 4 minimum 3,200 psi.
- 5 6) Maximum coarse aggregate size is 1-1/2 inches.

Table 2
Concrete Classes

Class of Concrete	Design Strength ¹ , Min f'c (psi)	Maximum Water to Cementitious Material Ratio	Coarse Aggregate Grades ^{2,3}	Cement Types	Mix Design Options	General Usage ⁴
A	3,000	0.60	1 – 4, 8	I, II, I/II, IL	1 and 2	Sidewalks, sidewalk curbs, riprap, channel liners, flumes
B	2,000	0.60	2 – 7	I, II, I/II, IL		Traffic signal controller foundations, small roadside signs, anchors, blocking, utility pipe encasement
C ⁵	3,600	0.45	1 – 6	I, II, I/II, IL	1 – 3	Culverts (except top slab of direct traffic culverts)
E	3,000	0.50	2 – 5	I, II, I/II, IL	1 – 3	Seal concrete
H ⁵	Note 6	0.45	3 – 6	I, II, I/II, IL	1 – 3	Precast concrete
S ⁵	4,000	0.45	2 – 5	I, II, I/II, IL	1 – 3	Top slabs of direct traffic culverts, approach slabs, headwalls, wingwalls, cast-in-place inlets, junction boxes and manholes
P1 ⁸	4,000	0.50	2 – 3	I, II, I/II, IL	1 – 3	Machine poured concrete pavement, monolithic curbs, non-monolithic curb and curb & gutter
P2 ⁸	4,500	0.45	2 – 3	I, II, I/II, IL	1 – 3	Hand poured concrete pavement, driveways, and decorative concrete pavement
HES ⁸	4,500	0.45	2 – 3	I, II, I/II, IL	Note 7	Concrete pavement and concrete pavement repair

1. Design strength must be attained within 56 days.
2. Do not use Grade 1 coarse aggregate except in foundations with 4 inch minimum clear spacing between reinforcing steel bars unless otherwise specified on the Drawings or approved by the City. Do not use Grade 1 aggregate in drilled shafts.
3. Use Grade 8 aggregate in extruded curbs unless otherwise approved by the City or specified on the Drawings.
4. For information only.

5. Structural concrete classes.
 - As shown on the Drawings or in the City Standard Details.
 - Mix design options do not apply. 700 pounds of cementitious material per cubic yard limit does not apply.
 - For machine poured concrete, use a minimum cementitious material content of 517 pounds per cubic yard. For hand poured concrete, use a minimum cementitious material content of 564 pounds per cubic yard.
4. Slump
- a. Provide concrete with a slump in accordance with Table 3 unless otherwise specified in the Drawings.
 - b. Request approval to exceed the slump limits listed in Table 3 with the mix design submittal as part of the Action Submittal.
 - c. Do not exceed maximum slump during production of the mix design or during concrete placement.
 - d. Any concrete placed with a slump exceeding the limits shown in Table 3 will be rejected and removed and replaced at no cost to the City.

Table 3
Concrete Pavement Slump Requirements

Concrete Use ¹	Slump Range ² , Inch
Walls (over 9 inches thick), caps, columns, piers, approach slabs	3 – 5
Bridge slabs, top slabs of direct traffic culverts	3 – 5
Inlets, manholes, walls (less than 9 inches thick), bridge railing, culverts, concrete traffic barrier	4 – 6
Precast concrete	4 – 9
Underwater concrete placements	6 – 8
Drilled shafts, slurry displaced and underwater drilled shafts	Note 3
Machine Poured Paving (Class P1 Concrete)	1.5 – 3
Hand Poured Paving (Class P2 and HES Concrete)	3 – 5
Curb, gutter, curb and gutter, sidewalk, driveways, riprap, small roadside sign foundations, concrete pavement repair, concrete repair, concrete base material for trench repair.	1.5 – 4

1. For information only.
2. For fiber reinforced concrete, perform slump before addition of fibers.
3. As shown on the Drawings.

5. Mix Design Options

- a. **Option 1:** Replace cement with at least the minimum dosage listed in the Fly Ash MPL for the fly ash used in the mixture. Do not replace more than 50% of the cement with fly ash.
- b. **Option 2:** Replace 35 to 50 percent of the cement with slag cement.
- c. **Option 3:** Replace 35 to 50 percent of the cement with a combination of fly ash, slag cement, MFA, metakaolin, or at least 3% silica fume; however, no more than 35% may be fly ash, and no more than 10% may be silica fume..

6. Trial Batch Production and Testing

- a. Trial Batch

- 1) Produce a trial batch of the mix design in accordance with the requirements of the concrete class specified in the Drawings, using the same materials proposed for the project.
- 2) Perform testing and provide the results verifying the concrete mix design is in accordance with the requirements of this Section. Testing to include:
 - a) Fresh concrete tests for air content and slump
 - b) Strength testing at 7 days and 28 days
- 3) Do not modify the mix design after the City has approved it.
- 4) Submit a new mix design if a change is made to concrete supplier.

Table 4
Concrete Discharge Times

Fresh Concrete Temperature, Degrees Fahrenheit	Max Time After Batching for Concrete Not Containing Type B or D Admixtures, Minimum	Max Time After Batching for Concrete Containing Type B or D Admixtures ² , Minimum
90 and Above	45	75
Between 75 and 90	60	90
Below 75	90	120

1. Admixture Types are defined in DMS-4640
2. Concrete must contain at least the minimum manufacturer's recommended dosage of Type B or D admixture.
3. Batching can occur at a commercial concrete site or at a batch plant.

2.3 ACCESSORIES [NOT USED]

2.4 SOURCE QUALITY CONTROL

A. Concrete Mix Design and Verification

1. Any concrete installed using a non-conforming mix design is subject to removal and replacement at no cost to the City.

B. Concrete Production Acceptance

1. During production and placement of concrete, perform testing to verify the concrete is in accordance with the requirements in this Section for admixtures, mix design, slump, and compressive strength.

C. Concrete Placement Acceptance

1. General

- a. If concrete is suspected of having foreign material, City may reject at any time and the concrete may be removed and replaced at no cost to the City.
- b. Acceptance will be based on attaining the strength and the fresh concrete tests.

2. Placement Sampling

- a. Perform all fresh and hardened concrete testing at the frequency shown on Table 5.
- b. If any test comes back as non-conforming, stop production and placement of concrete until the reason has been determined and resolved.
- c. Any concrete that was placed is subject to further testing and removal and replacement at no cost to the City.

Table 5
Testing Frequencies

Concrete Placements	Frequency
Bridge Deck Placements	Test the first 3 loads, then every 60 cubic yards or a fraction thereof specified by the City.
All Other Structural Class Concrete Placements	One test every 60 cubic yards or a fraction thereof per class per day as specified by the City
Non-Structural Class Concrete Placements	One test every 180 cubic yards or a fraction thereof as specified by the City

3. Testing of Fresh Concrete

- a. Sample and test fresh concrete for properties listed in Table 6.
- b. Take the sample at the time of discharge from the delivery truck.
- c. Concrete that is exhibiting segregation, excessive bleeding, or has a slump below the minimum allowed per concrete type (per Table 3) after addition of all water withheld will be rejected. Contractor will remove and replace at no cost to the City.

Table 6
Fresh Concrete Tests

Tests	Test Methods
Slump	Tex-415-A
Temperature	Tex-422-A
Air Content ¹	Tex-414-A, Tex-416-A, or ASTM C457

1. Only required when air-entraining admixtures are used.

4. Concrete Strength Test

- a. General
 - 1) Perform strength testing for all projects containing more than 60 cubic yards of concrete.
 - 2) Provide trained technicians during concrete paving to cast test cylinders in accordance with ASTM C31.
 - 3) Refer to Table 2 for required strength for each concrete class.
- b. Sampling
 - 1) Collect 6 test cylinders from a representative portion of concrete being placed for each test, with no less than two sets of cylinders taken from any one day's paving activities.
 - 2) After the cylinders have been cast by trained technicians, transport samples to the lab and test in accordance with ASTM C31 and ASTM C39. Provide test results to the City.
 - 3) Test the 6 cylinders per the following:
 - a) 2 of the cylinders tested at 7 days,
 - b) 2 cylinders tested at 28 days, and
 - c) 2 cylinder held and tested at 56 days, if necessary.

c. Acceptance

- 1) If the 28-day test results for the cylinders taken indicate deficient strength, the Contractor may, at their own expense, core the pavement in question and have the cores tested by another approved laboratory, in accordance with ASTM C42 and ACI 318 protocol.
- 2) Average of the 28-day test results of all cores within a designated area must meet 100 percent of the minimum specified strength.
- 3) If any individual cylinder or core results in less than 90 percent of design strength, additional cores will be taken to identify the limits of the non-compliant concrete at no cost to the City.
- 4) All concrete considered non-compliant will be removed and replaced at no cost to the City.

5. Cracked Concrete Acceptance Policy

- a. If cracks greater than 0.025-inches exist in concrete pavement upon completion of the project and prior to the termination of the maintenance period, the City may require corrective action that could include removal and replacement at no cost to the City depending on the cause of the cracking.
- b. Corrective Actions:
 - 1) The City will determine whether the following options are viable. The City will evaluate each crack greater than 0.025-inches during the final inspection and prior to the end of the maintenance period.
 - 2) Routing and Sealing:
 - a) Perform the routing and sealing work as directed by the Project Inspector, at no cost to the City, regardless of the cause of the cracking.
 - 3) If routing and sealing is not a viable solution due to the cause of the cracking, or the size, remove and replace the concrete.
 - 4) If the cause of the cracking is determined to be due to deficient subgrade, remove and replace the subgrade with flexible base or another approved subgrade within the limits of the deficient concrete.

6. Aggregate Moisture Testing

- a. Perform testing and provide results in accordance with 32 05 16.
- b. City may request this test to be performed at any time.

D. Non-Conforming Work

1. Concrete Mix Design and Production Materials

- a. The City may reject the mix design if not in accordance with the requirements of this Section.
 - 1) Any concrete installed using a non-conforming mix design will be subject to removal and replacement at no cost to the City.
- b. If the trial batch fails to meet the requirements specified in this Section, the Contractor will produce test results for trial batches until the trial batch meets the requirements specified herein at no cost to the City.
- c. The City may perform verification testing on all materials to verify the conformance of the mixture.

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

- 1 **3.2 EXAMINATION [NOT USED]**
- 2 **3.3 PREPARATION [NOT USED]**
- 3 **3.4 INSTALLATION**
- 4 A. Batching Equipment
- 5 1. Batching equipment shall be in accordance with the requirements of Section 41 14
- 6 00.
- 7 B. Refer to the following Sections for all installation requirements:
- 8 1. Section 03 30 00 Cast-in-Place Concrete
- 9 2. Section 03 80 00 Modifications to Existing Concrete Structures
- 10 3. Section 31 37 00 for Riprap
- 11 4. [Section 32 13 13 for Concrete Paving](#)
- 12 5. Section 32 13 16 for Decorative Concrete Paving
- 13 6. [Section 32 16 00 for Curbs, Gutters, Sidewalks, and Driveways](#)
- 14 7. [Section 32 32 00 for Retaining Walls](#)
- 15 8. Section 33 05 61 for Cast-in-Place Concrete Manholes
- 16 9. Section 33 42 11 for Stormwater Pipe and Boxes
- 17 10. Section 33 42 23 for Stormwater Headwalls, Wingwalls, and End Treatments
- 18 11. Section 33 42 30 for Stormwater Junction Boxes
- 19 12. Section 33 42 33 for Stormwater Curb Inlets and Area Drains
- 20 **3.5 REPAIR [NOT USED]**
- 21 **3.6 RE-INSTALLATION [NOT USED]**
- 22 **3.7 SITE QUALITY CONTROL [NOT USED]**
- 23 **3.8 SYSTEM STARTUP [NOT USED]**
- 24 **3.9 ADJUSTING [NOT USED]**
- 25 **3.10 CLEANING [NOT USED]**
- 26 **3.11 CLOSEOUT ACTIVITIES [NOT USED]**
- 27 **3.12 PROTECTION [NOT USED]**
- 28 **3.13 MAINTENANCE [NOT USED]**
- 29

1 3.14 ATTACHMENTS [NOT USED]

2 END OF SECTION

3

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
6/25/2024		Added ASTM C595 reference
6/25/2024		Added Type IL cement to allowable cement in 2.2.A.1.b and subsequent locations
6/25/2024		Modified air entrainment ranges under 2.2.A.4.C.2
6/25/2024		Modified fiber reinforcement requirements; 2.2.B.2
6/25/2024		Modified Table 2 "Concrete Classes" to allow for Type IL cement, altered General Usage types, and removed Classes D and F from the table
6/25/2024		Modified Table 3 "Concrete Pavement Slump Requirements" to give greater slump ranges
6/25/2024		Modified mix design options for replacement of cement with various substitute products; 2.2.C.5
6/25/2024		Altered test cylinder requirements; 2.4.C.4

4

SECTION 11 90 00

Other Equipment

PART 1 - GENERAL**1.1 SUMMARY**

A. Section Includes:

1. Mobile self-contained safety shower
2. Barrier arms and card readers

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Measurement
 - a. Materials, equipment, tools, testing, and incidentals are subsidiary to the installation of structures or item being installed.
2. Payment
 - a. The work performed and materials furnished in accordance with this item are subsidiary to the prices bid for shower/eyewash and barrier arms.

1.3 REFERENCES [NOT USED]**1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]****1.5 SUBMITTALS**

A. Submittals shall be in accordance with Section 01 33 00.

B. All submittals shall be approved by the City prior to delivery.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Shop Drawings

1. Mobile self-contained safety shower
2. Product Data
 - a. Provide a product data sheet from each manufacturer.

B. Informational Submittals:

1. Source Locations
 - a. Location of all material sources
2. Equipment Information
 - a. Submittal for all major equipment including:
 - 1) Equipment name and description
 - 2) Size
 - 3) Intended use

1.7 CLOSEOUT SUBMITTALS [NOT USED]**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

1 **1.9 QUALITY ASSURANCE [NOT USED]**

2 **1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]**

3 **1.11 FIELD CONDITIONS [NOT USED]**

4 **1.12 WARRANTY [NOT USED]**

5 **PART 2 - PRODUCTS**

6 **2.1 CITY-SUPPLIED PRODUCTS [NOT USED]**

7 **2.2 MATERIALS**

8 A. Mobile self-contained safety shower and eye wash as shown on drawings.

9 B. Barrier arms and card readers as shown on drawings.

10 **2.3 ACCESSORIES [NOT USED]**

11 **2.4 SOURCE QUALITY CONTROL [NOT USED]**

12 **PART 3 - EXECUTION**

13 **3.1 INSTALLERS [NOT USED]**

14 **3.2 EXAMINATION [NOT USED]**

15 **3.3 INSTALLATION [NOT USED]**

16 **3.4 REPAIR**

17 1. Any defect or damage to any of part of the mobile self-contained safety shower or
18 it's related hardware shall be repaired to the manufacturer's specifications prior to
19 installation.

20 **3.5 RE-INSTALLATION [NOT USED]**

21 **3.6 SITE QUALITY CONTROL [NOT USED]**

22 **3.7 SYSTEM STARTUP [NOT USED]**

23 **3.8 ADJUSTING [NOT USED]**

24 **3.9 CLEANING [NOT USED]**

25 **3.10 CLOSEOUT ACTIVITIES [NOT USED]**

26 **3.11 PROTECTION [NOT USED]**

27 **3.12 MAINTENANCE [NOT USED]**

28 **3.13 ATTACHMENTS [NOT USED]**

29 **END OF SECTION**

1

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

2

SECTION 13 00 00**Special Construction****PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Canvas structures including, but not limited to the following:
 - a. Canvas material.
 - b. Support and tensioning structures.
 - c. Necessary connections and caps.

1.2 PRICE AND PAYMENT PROCEDURES**A. Measurement and Payment**

1. Measurement
 - a. Materials, equipment, tools, testing, and incidentals are subsidiary to the installation of structures or item being installed.
2. Payment
 - a. The work performed and materials furnished in accordance with this item are subsidiary to the prices bid for building canvas.

1.3 REFERENCES [NOT USED]**1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]****1.5 SUBMITTALS**

- A. Submittals shall be in accordance with Section 01 33 00.
- B. All submittals shall be approved by the City prior to delivery.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS**A. Shop Drawings**

1. Canvas
2. Product Data
 - a. Provide a product data sheet from each manufacturer.

B. Informational Submittals:

1. Source Locations
 - a. Location of all material sources
2. Equipment Information
 - a. Submittal for all major equipment including:
 - 1) Equipment name and description
 - 2) Size
 - 3) Intended use

1.7 CLOSEOUT SUBMITTALS [NOT USED]**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

1.9 QUALITY ASSURANCE [NOT USED]**1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]****1.11 FIELD CONDITIONS [NOT USED]****1.12 WARRANTY**

A. The warranty from the installer shall be a 1-year workmanship warranty

B. The warranty from the canvas manufacturer shall be a 25-year material warranty.

PART 2 - PRODUCTS**2.1 CITY-SUPPLIED PRODUCTS [NOT USED]****2.2 MATERIALS****A. Manufacturer**

1. Manufacturer of the canvas shall be as follows unless otherwise approved.

a. Norseman

B. Canvas

1. Material shall be heavy duty, 13.8 oz white, Elite Non-FR HDPE

2. Canvas shall cover a building of 60' x 120' using 6 roof panels and 2 end panels.

3. 20' long PVC long extrusion caps shall be included as needed.

4. 6' long no-sew wind straps shall be included as necessary.

2.3 ACCESSORIES**A. End tensioning packages**

1. PVC, ratchets, cam buckles, etc. shall be included as per manufacturer's instructions.

2.4 SOURCE QUALITY CONTROL [NOT USED]**PART 3 - EXECUTION****3.1 INSTALLERS**

A. Installers of the Canvas shall be as follows unless otherwise approved.

1. The Autumn Breeze Group, Inc.

3.2 EXAMINATION [NOT USED]**3.3 PREPARATION****3.4 INSTALLATION****A. Canvas placement**

1. Canvas shall be placed as per the manufacturer's recommendation.

3.5 REPAIR

1. Any defect or damage to the canvas or its related hardware shall be repaired to the manufacturer's specifications prior to installation.

3.6 RE-INSTALLATION [NOT USED]

3.7 SITE QUALITY CONTROL [NOT USED]

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

SECTION 23 90 00**Ventilation Systems****PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:****1. Ventilation structures including, but not limited to the following:****a. Ventilation type.****1) Exhaust fans.****2) Louvered shutter vents.****3) Passive roof vents****b. Support structures.****1.2 PRICE AND PAYMENT PROCEDURES****A. Measurement and Payment****1. Measurement****a. Materials, equipment, tools, testing, and incidentals are subsidiary to the installation of structures or item being installed.****2. Payment****a. The work performed and materials furnished in accordance with this item are subsidiary to the prices bid for ventilation items.****1.3 REFERENCES [NOT USED]****1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]****1.5 SUBMITTALS****A. Submittals shall be in accordance with Section 01 33 00.****B. All submittals shall be approved by the City prior to delivery.****1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS****A. Shop Drawings****1. Exhaust fans, louvered shutter vents, and passive roof vents.****2. Product Data****a. Provide a product data sheet from each manufacturer.****B. Informational Submittals:****1. Source Locations****a. Location of all material sources****2. Equipment Information****a. Submittal for all major equipment including:****1) Equipment name and description****2) Size****3) Intended use****1.7 CLOSEOUT SUBMITTALS [NOT USED]**

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**1.9 QUALITY ASSURANCE [NOT USED]****1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]****1.11 FIELD CONDITIONS [NOT USED]****1.12 WARRANTY [NOT USED]****PART 2 - PRODUCTS****2.1 CITY-SUPPLIED PRODUCTS [NOT USED]****2.2 MATERIALS****A. Exhaust Fans**

1. The Fans shall be single phase, variable speed, with 24" blades.
2. Fans shall be made of aluminum and have aluminum framing.
3. Fan motor shall have a totally enclosed ¼ HP air over motor, and rotate at a maximum of 1075 RPM, with a Maximum exhaust of 4163 CFM.

B. End Vents

- a. Single acting gravity end vents shall be 39" x 39" x 6 ¼" aluminum louvered shutter vents with static dampers and a maximum air velocity of 2500 FPM

C. Passive Roof Vents

- a. Vents shall be constructed of rugged polyethylene material, and made to block rain, snow, and inhibit bird nesting
- b. Vents shall be mounted on dual ridge purlins for support, and shall be 50 ½" long x 20 ¾" x 20" tall
- c. Vent capacity shall be 3000 CFM

2.3 ACCESSORIES [NOT USED]**2.4 SOURCE QUALITY CONTROL [NOT USED]****PART 3 - EXECUTION****3.1 INSTALLERS**

Installers of the ventilation systems will be as follows unless otherwise approved:

1. The Autumn Breeze Group, Inc.

3.2 EXAMINATION [NOT USED]**3.3 INSTALLATION****A. Fans, Vents, and Passive Vents placement.**

1. Shall be placed as per the manufacturer's recommendation.

3.4 REPAIR**A. Defects or damages**

1. Any defect or damage to any of the Fans, Vents, and Passive Vents or their related hardware shall be repaired to the manufacturer's specifications prior to installation.

3.5 RE-INSTALLATION [NOT USED]

3.6 SITE QUALITY CONTROL [NOT USED]

3.7 SYSTEM STARTUP [NOT USED]

3.8 ADJUSTING [NOT USED]

3.9 CLEANING [NOT USED]

3.10 CLOSEOUT ACTIVITIES [NOT USED]

3.11 PROTECTION [NOT USED]

3.12 MAINTENANCE [NOT USED]

3.13 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

1
2
3 **PART 1 - GENERAL**

5 A. Section Includes:

6 1. All labor, materials, and equipment required to install, test, and provide an

7 operational electrical system as specified in the Drawings

8 B. Deviations from this City of Denton Standard Specification:

9 1. None.

10 C. Related Specification Sections include but are not limited to:

11 1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the

12 Contract.

13 2. Division 1 - General Requirements.

14 3. Division 26 - Electrical.

A. Measurement and Payment

1. Furnish and Install Electrical Service
 - a. Measurement
 - 1) Measured per each electrical service installed
 - b. Payment
 - 1) The work performed and the materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Furnish/Install Electrical Service" for:
 - a) Various types.
 - b) Various sizes.
 - c. The price bid shall include:
 - 1) Furnishing and installing all the components of the electrical service as specified by the Drawings
 - 2) All necessary permits and fees and other costs
 - 3) Coordinating with the utility company for all work and materials provided by the utility company
 - 4) Poles
 - 5) Service supports
 - 6) Foundations
 - 7) Anchor bolts
 - 8) Riprap
 - 9) Enclosures
 - 10) Switches
 - 11) Breakers
 - 12) Service conduit
 - 13) Fittings

- 1 14) Service conductors
- 2 15) Brackets
- 3 16) Bolts
- 4 17) Hangers
- 5 18) Hardware
- 6 19) Equipment, labor, tools, and incidentals
- 7 20) Excavation
- 8 21) Disposal of excess material
- 9 22) Haul off
- 10 23) Cleanup
- 11 2. Relocate Electrical Service
- 12 a. Measurement
- 13 1) Measured per each electrical service relocated.
- 14 b. Payment
- 15 1) The work performed and the materials furnished in accordance with this
- 16 item and measured as provided under "Measurement" will be paid for at the
- 17 unit price bid per each for "Relocate Electrical Service" for:
- 18 a) Various types.
- 19 b) Various sizes.
- 20 c. The price bid shall include:
- 21 1) Disconnecting and isolating the existing electrical service as specified in
- 22 the Drawings
- 23 2) Relocating the service supports
- 24 3) New service support foundation
- 25 4) Furnishing and compacting of backfill
- 26 5) Paying all fees, permits, and other costs
- 27 6) Coordination with the utility company for all work and materials provided
- 28 by the utility company
- 29 7) Removal and disconnection of equipment and materials
- 30 8) Poles
- 31 9) Service supports
- 32 10) Foundations
- 33 11) Anchor bolts
- 34 12) Riprap
- 35 13) Enclosures
- 36 14) Switches
- 37 15) Breakers
- 38 16) Service conduit
- 39 17) Fittings
- 40 18) Service conductors
- 41 19) Brackets
- 42 20) Bolts
- 43 21) Hangers
- 44 22) Hardware
- 45 23) Equipment, labor, tools, and incidentals
- 46 24) Excavation
- 47 25) Disposal of excess material
- 48 26) Haul off
- 49 27) Cleanup
- 50

3. Remove Electrical Service

a. Measurement

- 1) Measured per each of the electrical service removed

b. Payment

- 1) The work performed and the materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid of each for "Remove Electrical Service" for:

a) Various types.

b) Various sizes.

c. The price bid shall include:

- 1) Coordination with the utility company to disconnect and isolate the electrical service
- 2) Removing the service supports
- 3) Furnishing and compaction of backfill
- 4) Materials, equipment, labor, tools, and incidentals
- 5)

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.
1. Texas Department of Transportation (TxDOT), Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges:
 - a. Item 441, "Steel Structures"
 - b. Item 445, "Galvanizing"
 - c. Item 449, "Anchor Bolts"
 - d. Item 618, "Conduit"
 - e. Item 620, "Electrical Conductors"
 - f. Item 627, "Treated Timber Poles"
 - g. Item 628, "Electrical Services"
 - h. Item 656, "Foundations for Traffic Control Devices"
2. Texas Department of Transportation (TxDOT) Departmental Material Specifications (DMS):
 - a. DMS-11080, "Electrical Services"
3. TxDOT Material Producer List (MPL)
4. National Electrical Manufacturers Association (NEMA)
5. National Electrical Code (NEC)
6. Underwriters Laboratories, Inc. (UL)
7. Canadian Electrical Code (CSA)

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination

1. Where references are made to the Related Work paragraph in each Specification Section, referring to other Sections and other Divisions of the Specifications, the Contractor shall provide such information or Work as may be required in those references, and include such information or Work as may be specified.

2. Division 26 requirements apply to electrical work provided under any division of the Specifications.

B. Service and Metering

1. Obtain service from the electric service provider at 120/240 Volts, Single Phase, Three Wire, 60 Hz from transformer equipment furnished and installed by the power company.

2. Power company responsibilities:

- a. Furnishing and installing the primary overhead conductors and pole line
- b. Furnishing and installing the transformer or riser pole, primary cutouts, lightning arresters and grounding
- c. Furnishing and installing primary conduits and cables
- d. Furnishing and installing the transformer pad and grounding (if pad-mounted transformer)
- e. Furnishing and installing transformer
- f. Terminating underground primary cables
- g. Furnishing metering current transformers (CT's), meter and meter wiring
- h. Terminating secondary cables to the service transformer
- i. Furnishing meter base and enclosure

3. Contractor responsibilities:

- a. Furnishing and installing secondary conduits and cables
- b. Furnishing and installing power company approved metering current transformer enclosure (if required by power company)
- c. Installing meter base
- d. Furnishing and installing an empty conduit with pull line from the metering current transformer enclosure to the meter enclosure. Conduit size and type approved by the power company
- e. Coordinating electrical service installation with power company

4. City responsibilities:

- a. Negotiating with power company for the costs of new or revised services
- b. Making payment directly to power company for such costs

C. Codes, Inspections and Fees

1. Obtain all necessary permits and pay all fees required for permits and inspections.

1.5 SUBMITTALS

A. Submittals shall be in accordance with Section 01 33 00.

B. All submittals shall be approved by the City prior to delivery.

1.6 ACTION SUBMITTALS [NOT USED]

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]**1.10 DELIVERY, STORAGE, AND HANDLING****A. Storage and Handling Requirements**

1. Secure and maintain a location to store the material in accordance with Section 01 66 00.

1.11 FIELD CONDITIONS [NOT USED]**1.12 WARRANTY [NOT USED]****PART 2 - PRODUCTS****2.1 CITY-FURNISHED PRODUCTS [NOT USED]****2.2 MANUFACTURER / MATERIALS****A. Manufacturers**

1. Provide material in accordance with TxDOT's Traffic Material Producer List:
<http://ftp.dot.state.tx.us/pub/txdot-info/cmd/mpl/qtrfsigegp.pdf>
 - a. Manufacturers on this list shall be in accordance with this Section and related Sections.
2. Electrol Systems Meter Pedestal, Stainless Steel:
 - a. TY D (120/240)070(NS)SS(E)PS(U), or
 - b. Approved equal.
3. Substitution requests for manufacturers or models not indicated above shall be processed in accordance with Section 01 25 00.

B. Materials

1. Provide materials that comply with the details shown on the plans, the requirements of this Item, and the pertinent requirements of the following TxDOT specifications:
 - a. Item 441
 - b. Item 445
 - c. Item 449
 - d. Item 618
 - e. Item 620
 - f. Item 627
 - g. Item 656
2. Provide new materials, except where specified in the Drawings to be reused.
3. For the installation of electrical services, use new materials that meet the requirements of the NEC, UL, CSA, and NEMA, and are in accordance with DMS-11080, "Electrical Services."
4. Provide prequalified electrical services prequalified from TxDOT's MPL. Notify the City in writing of selected materials from the MPL intended for use on each project.
5. Pedestal Service shall be custom made in accordance with the Contract Documents
 - a. Supplied with 100 amp main breaker
 - b. 1-50a/1p for traffic signal

- 1 c. 1-20a/2p for lighting
- 2 d. 1-15a/1p for control circuit interior photo cell with windows
- 3 e. Hand-off-Auto Selector Switch
- 4 f. 200 amp meter socket
- 5 6. Pedestal service type shall be used unless otherwise approved by the City.
- 6 7. Pedestal service enclosure shall be aluminum and light green in color.

7 **2.3 ACCESSORIES [NOT USED]**

8 **2.4 SOURCE QUALITY CONTROL [NOT USED]**

9 **PART 3 - EXECUTION**

10 **3.1 INSTALLERS [NOT USED]**

11 **3.2 EXAMINATION**

12 A. Interpretation of Drawings

- 13 1. Coordinate the conduit installation with other trades and the actual supplied
- 14 equipment.
- 15 2. Where circuits are shown as home runs: Provide fittings and boxes for complete
- 16 raceway installation.
- 17 3. Verify exact locations and mounting heights of lighting fixtures, switches and
- 18 receptacles prior to installation.

19 **3.3 PREPARATION [NOT USED]**

20 **3.4 INSTALLATION**

21 A. Installation

22 1. General

- 23 a. Perform work as specified in the Drawings and in accordance with the
- 24 requirements of this Section.
- 25 b. Use established industry and utility safety practices when installing, relocating,
- 26 or removing electrical services located near overhead or underground utilities.
- 27 1) Consult with the appropriate utility company before beginning work.

28 2. Installation

- 29 a. Furnish and install electrical service equipment.
- 30 b. Ensure components of the electrical service meet the requirements of the
- 31 Contract Documents.
- 32 c. Follow NEC and local utility company requirements when installing the
- 33 electrical equipment.
- 34 1) Coordinate the utility companies' work for providing service.

35 3. Relocation

- 36 a. Coordinate relocation with the appropriate utility company before beginning
- 37 work.
- 38 b. Remove and reinstall existing electrical service in accordance with this Section.
- 39 1) Replace or add circuit breakers as specified in the Drawings.
- 40

4. Removal

- a. Coordinate removal with the appropriate utility company before beginning work.
 - 1) Before the removal of the electrical service, disconnect and isolate any existing electrical service equipment in accordance with the utility company's requirements.
- b. Remove existing electrical service support a minimum of 2 feet below finished grade unless otherwise specified in the Drawings.
- c. Repair the remaining hole by backfilling with material equal in composition and density to the surrounding area.
- d. Replace any surfacing such as asphalt pavement or concrete riprap with like material to equivalent condition.
- e. Disconnect conductors and remove them from the conduit.
 - 1) Cut off all protruding conduit 6 inches below finished grade.
 - 2) Abandoned conduit need not be removed unless specified in the Drawings.
- f. Reconnect conductors and conduit to be reused when specified in the Drawings.
 - 1) Any necessary splices should be made in ground boxes, unless otherwise specified in the Drawings, and approved by City.
- g. Accept ownership of unsalvageable materials, and dispose of them in accordance with Federal, State, and local regulations.

B. Phase Balancing

1. Connect circuits on motor control centers and panelboards to result in evenly balanced loads across all phases.

3.5 REPAIR [NOT USED]**3.6 RE-INSTALLATION [NOT USED]****3.7 FIELD QUALITY CONTROL [NOT USED]****3.8 SYSTEM STARTUP**

A. Tests and Settings

1. Test systems and equipment furnished under Division 26.
2. Repair or replace all defective work as directed by City.
3. Adjust the systems as specified and/or required in accordance with manufacturer and utility requirements.
4. Prior to energizing electrical equipment, perform the following tests:
 - a. Submit a sample test form or procedure.
 - b. Submit test reports required by the utility company and data within 30 days after the test.
 - c. Include names of all test personnel.
 - d. Initial each test.
5. Check wire and cable terminations for tightness.
6. Verify all terminations at transformers, equipment, capacitor connections, panels, and enclosures by producing a 1-2-3 rotation on a phase sequence motor when connected to A, B, and C phases.

7. Inspect, set, and test mechanical operation for circuit breakers, disconnect switches, motor starters, and control equipment.
8. Check interlocking, control, and instrument wiring for each system and/or part of a system to prove the system will function as specified in the Drawings.
9. Schedule and coordinate testing with the City a minimum of 2 weeks in advance.
10. Provide qualified test personnel, instruments, and test equipment.

3.9 ADJUSTING [NOT USED]**3.10 CLEANING [NOT USED]****3.11 CLOSEOUT ACTIVITIES [NOT USED]****3.12 PROTECTION [NOT USED]****3.13 MAINTENANCE [NOT USED]****3.14 ATTACHMENTS [NOT USED]****END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

SECTION 26 05 26
GROUNDING CONDUCTORS, GROUND RODS, AND POWER LEAD-IN CABLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Grounding Conductors.
 2. Ground Rod.
- B. Deviations from this City of Denton Standard Specification:
1. None.
- C. Related Specification Sections include but are not limited to:
1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 2. Division 1 - General Requirements.

1.2 PRICE AND PAYMENT PROCEDURES

- A. Measurement and Payment
1. Grounding Conductors
 - a. Measurement
 - 1) Measured per linear foot of grounding conductor installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" shall be paid for at the unit price bid per linear foot of "Bare Elec Conductor" installed for:
 - a) Various types.
 - b) Various sizes.
 - c. The price bid shall include:
 - 1) Furnishing and installing Grounding Conductor as specified by the Drawings
 2. Ground Rod
 - a. Measurement
 - 1) This item is considered subsidiary to the various Traffic Signal Structures being installed.
 - b. Payment
 - 1) The work performed and the materials furnished in accordance with this Item are subsidiary to various Traffic Signal Structures being installed and shall be subsidiary to the unit price bid per various Traffic Signal Structures being installed, no other compensation will be allowed.
 3. Power Lead-in Cable
 - a. Measurement
 - 1) Measured per linear foot of power lead-in cable installed.

b. Payment

1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" shall be paid for at the unit price bid per linear foot of "Insulated Elec Conductor" installed for:

- a) Various types.
- b) Various sizes.

c. The price bid shall include:

1) Furnishing and installing Power Lead-in Cable as specified by the Drawings

1.3 REFERENCES

A. Abbreviations and Acronyms

- 1. AWG: American wire gauge
- 2. PVC: polyvinyl chloride
- 3. RHW: Rubber insulation, heat resistance of 75°C, water resistance
- 4. THHN: Thermoplastic, high heat resistance, nylon coated
- 5. A/C: alternating current

B. Reference Standards

- 1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.
- 2. Texas Department of Transportation (TxDOT), Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges:
 - a. Item 620, Electrical Conductors.
- 3. Texas Department of Transportation (TxDOT) Departmental Materials Specification:
 - a. DMS-11040, Electrical Conductors.
- 4. Federal Specification A-A-59544
- 5. American Society for Testing and Materials (ASTM):
 - a. ASTM B33, Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes.
 - b. ASTM B8, Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
- 6. International Municipal Signal Association (IMSA).
- 7. National Electric Code (NEC).

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

1.5 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00.
- B. All submittals shall be approved by the City prior to delivery.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

- A. Product Data Sheets are required for:
 - 1. Grounding conductor.

1 2. Grounding rod.

2 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

3 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

4 **1.9 QUALITY ASSURANCE [NOT USED]**

5 **1.10 DELIVERY, STORAGE, AND HANDLING**

6 A. Storage and Handling Requirements

7 1. Secure and maintain a location to store the material in accordance with Section 01
8 66 00.

9 **1.11 FIELD CONDITIONS [NOT USED]**

10 **1.12 WARRANTY [NOT USED]**

11 **PART 2 - PRODUCTS**

12 **2.1 CITY-FURNISHED PRODUCTS [NOT USED]**

13 **2.2 MATERIALS**

14 A. Materials

15 1. Grounding Conductor

16 a. Grounding Conductor shall be in accordance with TxDOTDMS-11040.

17 b. The grounding conductor shall be a #6 AWG solid copper wire.

18 c. The conductor shall be bonded to all groundrods.

19 2. Ground Rod

20 a. Ground rod electrodes shall be copper-bonded steel being at least 5/8 inch in
21 diameter.

22 b. All ground rods shall be a minimum of 8 feet, with a minimum of 6 feet buried.

23 3. Power lead-in cable

24 a. Power lead-in cable shall be stranded RHW copper wire and suitable for A/C
25 electric service.

26 b. The cable shall be capable of operating at 600 volts maximum and suitable for
27 use at conductor temperatures not exceeding 167 degrees Fahrenheit (75 degrees
28 Celsius).

29 c. Material and construction shall be in accordance with the applicable
30 requirements of IMSA and NEC standards.

31 d. Conductors shall be stranded, anneal coated copper.

32 e. Coated wire

33 1) Use copper wire in accordance with ASTM B33 before insulating or
34 stranding.

35 f. Stranding shall be class B, in accordance with the latest edition of ASTM B8.

36 g. Insulation shall be THHN and comply with Federal Specification A-A-59544
37 and all applicable ASTM standards.

38 **2.3 ACCESSORIES [NOT USED]**

1 2.4 SOURCE QUALITY CONTROL [NOT USED]**2 PART 3 - EXECUTION****3 3.1 INSTALLERS [NOT USED]****4 3.2 EXAMINATION [NOT USED]****5 3.3 PREPARATION [NOT USED]****6 3.4 INSTALLATION****7 A. Special Techniques****8 1. Ground Conductors****9 a. Perform Work as specified in the Drawings.****10 2. Ground Rod****11 a. Properly install and connect a ground rod for each controller cabinet, power**
12 drop, and signal pole pier to reduce any extraneous voltage to a safe level.**13 b. The ground rod shall be located to minimize the length of the grounding-**
14 conductor run.**15 c. For pole-mounted cabinets, a grounding rod and grounding conductor shall be**
16 installed at the nearest foundation or ground box.**17 d. All grounding circuits shall be substantial, permanent, and electrically**
18 continuous with an ohms-to-ground resistance not to exceed 10 ohms when
19 tested by volt-ohm-meter.**20 e. Illumination poles shall use concrete-grounded electrodes.****21 f. Grounding Connectors and Electrodes****22 1) When the location precludes driving a single ground rod to a depth of 8 feet**
23 (2.4 m), or when a multiple ground rod matrix is used to obtain the required
24 resistance to ground, ground rods shall be spaced at least 6 feet apart and
25 bonded by a minimum No. 6 AWG copper wire.**26 2) Connection of grounding circuits to grounding electrodes shall be by**
27 devices which will ensure a positive, fail-safe grip between the conductor
28 and the electrode.**29 a) No splice joint will be permitted in the grounding conductor.****30 3) Each grounding rod shall be driven into the ground to a depth sufficient to**
31 provide the required resistance (10 ohms) between electrodes and ground.**32 3. Power Lead-in Cable****33 a. Perform work as specified in the Drawings.****34 3.5 REPAIR [NOT USED]****35 3.6 RE-INSTALLATION [NOT USED]****36 3.7 FIELD QUALITY CONTROL [NOT USED]****37 3.8 SYSTEM STARTUP [NOT USED]****38 3.9 ADJUSTING [NOT USED]****39 3.10 CLEANING [NOT USED]**

SECTION 26 05 35**GROUND BOXES****PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Ground Boxes
2. Remove Ground Boxes

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.
3. Section 26 05 33 - Raceway and Boxes.

1.2 PRICE AND PAYMENT PROCEDURES**A. Measurement and Payment****1. Furnish and Install Ground Boxes****a. Measurement**

- 1) Measured per each ground box installed for:
 - a) Various sizes.
 - b) Various types.

b. Payment

- 1) The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid per each "Ground Box" installed for:
 - a) Various sizes.
 - b) Various types.

c. The price bid shall include:

- a) Furnishing and installing Ground Boxes as specified in the Drawings
- b) Excavation and backfill
- c) Enclosures
- d) Covers
- e) Bolts
- f) Gravel
- g) Concrete apron, if required

2. Remove Ground Boxes**a. Measurement**

- 1) Measured per each ground box removed for:
 - a) Various sizes.
 - b) Various types.

b. Payment

1) The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid per each "Ground Box" removed for:

- a) Various sizes.
- b) Various types.

c. The price bid shall include:

- 1) Removing Ground Boxes as specified in the Drawings
- 2) Excavation and backfill

1.3 REFERENCES

A. Reference Standards

- 1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.
- 2. Texas Department of Transportation (TxDOT), Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges:
 - a. Item 624, Ground Boxes.
 - b. Item 421, Hydraulic Cement Concrete.
 - c. Item 432, Riprap.
 - d. Item 440, Reinforcement for Concrete.
 - e. Item 618, Conduit.
 - f. Item 620, Electrical Conductors.
- 3. Texas Department of Transportation (TxDOT) Departmental Material Specifications (DMS):
 - a. DMS-11070, Ground Boxes.

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

1.5 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00.
- B. All submittals shall be approved by the City prior to delivery.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

- A. Product Data Sheets are required for:
 - 1. Ground boxes

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING

A. Storage and Handling Requirements

- 1. Secure and maintain a location to store the material in accordance with Section 01 66 00.

1 1.11 FIELD CONDITIONS [NOT USED]**2 1.12 WARRANTY [NOT USED]****3 PART 2 - PRODUCTS****4 2.1 CITY-FURNISHED PRODUCTS [NOT USED]****5 2.2 MATERIALS****6 A. Materials****7 1. Traffic Signal Ground boxes shall be as follows:****8 a. Martin Enterprises or equal, size 24x36x24 (TxDOT TypeD)**

9 1) Provide fabricated precast polymer concrete ground boxes in accordance
10 with DMS-11070.

11 2) Ground boxes shall have bolted down covers.

12 3) Cast iron covers are not allowed.

13 4) Covers will clearly contain the words "TRAFFIC SIGNAL".

14 2. Fiber Ground Boxes shall be as follows:**15 a. Martin Enterprises or equal, size 24x36x36 (TxDOTITS)**

16 1) Provide fabricated precast polymer concrete ground boxes in accordance
17 with DMS-11070.

18 2) Ground boxes shall have bolted down covers.

19 3) Cast iron covers are not allowed.

20 4) Covers will clearly contain the words "DANGER HIGH VOLTAGE
21 TRAFFIC SIGNAL".

22 2.3 ACCESSORIES [NOT USED]**23 2.4 SOURCE QUALITY CONTROL [NOT USED]****24 PART 3 - EXECUTION****25 3.1 INSTALLERS [NOT USED]****26 3.2 EXAMINATION [NOT USED]****27 3.3 PREPARATION [NO USED]****28 3.4 INSTALLATION****29 A. Special Techniques**

30 1. Use established industry and utility safety practices when installing or removing
31 ground boxes located near underground utilities. Consult with the appropriate utility
32 company before beginning work.

33 2. Fabricate and install ground boxes as specified in the Drawings. Install ground box
34 to approved line and grade.

35 3. Utilize precast concrete ground boxes in accordance with this and related Sections.

4. Construct concrete aprons as specified in the Drawings and in accordance with TxDOT Item 421.
5. A minimum gravel fill of 9 inches shall be placed under each ground box and a concrete skirt installed around each ground box as specified in the Drawings.
6. Lube the bolts, clean out the cover rim, and clean the ground box inside and out prior to final inspection.
7. Removal
 - a. Remove existing ground boxes and concrete aprons to at least 6 in. below the conduit level.
 - b. Uncover conduit to a sufficient distance so 90 degree bends can be removed, and conduit reconnected.
 - c. Clean the conduit in accordance with Section 26 05 33.
 - d. Replace conduit within 5 ft. of the ground box.
 - e. Remove old conductors and install new conductors as specified in the Drawings.
 - f. Backfill area with material equal in composition and density to the surrounding area. Replace surfacing material with similar material to an equivalent condition.

3.5 REPAIR [NOT USED]**3.6 RE-INSTALLATION [NOT USED]****3.7 FIELD QUALITY CONTROL [NOT USED]****3.8 SYSTEM STARTUP [NOT USED]****3.9 ADJUSTING [NOT USED]****3.10 CLEANING [NOT USED]****3.11 CLOSEOUT ACTIVITIES [NOT USED]****3.12 PROTECTION [NOT USED]****3.13 MAINTENANCE [NOT USED]****3.14 ATTACHMENTS [NOT USED]****END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

SECTION 31 23 16
UNCLASSIFIED EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavation for general site grading, street grading, and channel excavation.

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.
3. Section 02 41 13 - Selective Site Demolition.
4. Section 02 41 15 - Paving Removal.
5. Section 31 00 00 - Site Clearing.
6. Section 31 24 00 - Embankments.
7. Section 31 25 14 - Erosion and Sedimentation Controls.

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Unclassified Excavation

a. Measurement

- 1) Measured per cubic yard in its final position using the average end area method of Excavation performed. Limits of measurement shown in the Drawings.

b. Payment

- 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per cubic yard for "Unclassified Excavation."

c. The price bid shall include:

- 1) Shrinkage and/or swelling factors. Contractor is responsible for determining factors and will not be compensated separately.
- 2) Excavation of all materials within excavation limits
- 3) Finishing parkways and medians
- 4) Excavation
- 5) Safety
- 6) Dewatering
- 7) Temporary drainage
- 8) Drying
- 9) Dust control
- 10) Reworking or replacing over excavated material in rock cuts

- 1 11) Placement
- 2 12) Compaction
- 3 13) Loading, hauling, and unloading
- 4 14) Disposal of unsuitable and excess materials not used elsewhere on the job
- 5 site
- 6 15) Finishing slopes, ditches, and channels
- 7 16) Maintenance blading or scarifying the ground surface
- 8 17) Equipment
- 9 18) Tools, equipment, and labor and incidentals needed to execute work

10 1.3 REFERENCES

11 A. Abbreviations and Acronyms

- 12 1. ROW: Right-of-Way
- 13 2. SWPPP: Storm Water Pollution Prevention Plan

14 B. Classification:

- 15 1. All authorized excavation is considered unclassified and involves removal of all
- 16 materials necessary to complete excavation of the site. Any reference to rock,
- 17 limestone, or other material on the Drawings and/or this specification is solely for
- 18 the City and the Contractor's information and is not to be taken as an indication or
- 19 guarantee of classification of excavation. Payment will not be separated based on
- 20 classification of excavation unless expressly noted in the Drawings.

21 C. Reference Standards

- 22 1. Reference standards cited in this Section refer to the current reference standard
- 23 published at the time of the latest revision date logged at the end of this Section
- 24 unless a date is specifically cited.
- 25 a. Occupational Safety and Health Administration (OSHA):
- 26 1) Technical Manual Section 5.
- 27 2) Laws and Regulations Standard 1926, Safety and Health Regulations for
- 28 Construction.
- 29 b. City of Denton Development Code

30 1.4 ADMINISTRATIVE REQUIREMENTS

31 A. Permits

- 32 1. For commercial and residential construction, a Clear and Grade Permit is required.
- 33 a. No excavation or embankment activities will be allowed without an executed
- 34 construction contract and an assigned City inspector.
- 35 b. If the City determines or suspects excavation and/or embankment activities
- 36 have occurred prior to an executed contract and a City inspector assigned, all
- 37 construction activities could be suspended for at least 30 days pending the
- 38 results of the Pre-Earthwork meeting.
- 39 c. Any damages caused by early clearing and grading activities will be repaired at
- 40 no cost to the City.

41 B. Sequencing

- 42 1. Sidewalk Construction
- 43 a. Where existing sidewalks are to be closed during Paving Removal activities:
- 44 1) Utilize pedestrian/sidewalk detour route specified in the Drawings

- a) If no detour route is provided, submit a pedestrian/sidewalk detour route to City for review.
- b. The pedestrian/sidewalk detour route will be subsidiary to pertinent Traffic Control items included with the project.
- c. Install all sidewalk detours and closures in accordance with the TMUTCD, State, and local guidelines.
- d. Provide any traffic control devices in accordance with Section 34 71 13.

C. Pre-Earthwork Meeting

1. Hold a Pre-Earthwork meeting at the same time as the Pre-Site Clearing Meeting. Invite the City and appropriate representatives.
2. Clearly mark all the following items prior to the meeting:
 - a. All requirements for pre-site clearing meeting in accordance with 31 00 00.
 - b. Excavation limits
 - c. Cut/fill stakes
3. Submit means and methods for any rock cutting for review prior to the Pre-Earthwork Meeting.
4. Have the SWPPP in place and inspected by Watershed Protection in accordance with Section 01 57 13 prior to excavation activities.
5. Determine any site-specific constraints or concerns prior to meeting for review.

1.5 SUBMITTALS

A. Submittals shall be in accordance with Section 01 33 00.

B. All submittals shall be approved by the City prior to delivery.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Informational Submittal

1. Equipment Information

- a. Submittal for all major equipment to include:
 - 1) Equipment name
 - 2) Size
 - 3) Intended use

2. Explosives, Blasting, and Rock Ripping

- a. Submit storage locations and guidelines for using explosives.
- b. For rock ripping and blasting, submit means and methods prior to Pre-Earthwork meeting for review.
- c. Provide a list of personnel and employer who will be handling and using explosives. Provide reference information including previous projects and certifications proving explosive qualifications.

1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE

A. Excavation Safety

1. Perform all excavations in a safe manner.

- 1 2. Comply with the requirements of OSHA 29 CFR part 1926 and state requirements
2 when performing excavation, sheeting, and bracing.

3 **1.10 DELIVERY, STORAGE, AND HANDLING**

4 **A. Storage and Handling Requirements**

- 5 1. Secure and maintain a location to store the material prior to any excavation
6 activities beginning in accordance with Section 01 66 00.
- 7 2. Store excavated material to be used in other areas within the right-of-way (ROW)
8 or easement limits unless specifically disallowed in the Contract Documents.
9 a. If the Contract Documents do not allow the storage of excavated materials
10 within ROW or easements, secure and maintain an adequate storage location
11 off-site.
- 12 3. Store material and equipment in approved areas that are at least 30 feet from edge
13 of road limits. Install erosion control fencing around staging areas.
- 14 4. For urban areas with limited staging areas, designate offsite location for storing and
15 staging of materials and equipment. If this is not feasible, obtain approval from the
16 City to stage and store materials within project site.
- 17 5. All offsite staging areas to be in accordance with SWPPP and Watershed Protection
18 requirements. Offsite staging areas are considered part of the project site and will
19 need to be included with the SWPPP and Watershed Protection review.
- 20 6. If excavated material is stored off-site:
21 a. Provide an authorized letter from property owner approving the storage of
22 excavated materials.
23 b. Contractor is responsible for negotiating and coordinating with the property
24 owner.
25 c. The City is not responsible for establishing an off-site location.
26 d. The City is not liable for any damage resulting in off-site storage of excavated
27 materials.
- 28 7. Remove any excavated material not used in other areas within 48 hours of
29 excavation activities.
- 30 8. Do not block drainage ways, inlets, or driveways with excavation activities or
31 materials.
- 32 9. Provide erosion control in accordance with Section 31 25 14.
- 33 10. Store materials only in areas barricaded as provided in the traffic control plans or as
34 approved by the City if excavation is performed during active traffic.
- 35 11. Do not store material within the drip line of any tree or in landscaped areas.
- 36 12. Install tree protection in accordance with Section 31 10 00.

37 **1.11 FIELD CONDITIONS**

38 **A. Existing Conditions**

- 39 1. Any data provided regarding subsurface conditions of excavated material is not
40 intended as a representation or warranty of accuracy or continuity of proposed
41 excavated material.
- 42 2. The City is not responsible for interpretations or conclusions made by the
43 Contractor regarding the existing material to be excavated.

1 **1.12 WARRANTY [NOT USED]**

2 **PART 2 - PRODUCTS [NOT USED]**

3 **2.1 CITY-FURNISHED [NOT USED]**

4 **2.2 MATERIALS [NOT USED]**

5 **2.3 ACCESSORIES [NOT USED]**

6 **2.4 SOURCE QUALITY CONTROL [NOT USED]**

7 **PART 3 - EXECUTION**

8 **3.1 INSTALLERS [NOT USED]**

9 **3.2 EXAMINATION [NOT USED]**

10 **3.3 PREPARATION**

11 A. Surface Preparation

- 12 1. If needed, provide temporary drainage to maintain positive drainage throughout
13 excavation activities. Any temporary drainage construction will be considered
14 subsidiary to excavation.
15 2. Dewatering and temporary storm drain activities will be considered part of the
16 SWPPP and Watershed Protection review and are required to be in accordance with
17 all requirements listed therein.

18 B. Demolition / Removal

- 19 1. Remove any existing pavement in accordance with Section 02 41 15 and 02 41 13.

20 **3.4 EXCAVATION**

21 A. General

- 22 1. Accept ownership of unsuitable or excess material and dispose of material off-site
23 in accordance with Federal, State, and local regulations. City is not responsible for
24 any disposed material or disposal activities.
25 2. Perform excavations while material to be excavated is dry aside from water applied
26 for dust control.
27 3. Contractor is responsible for the condition of the subgrade until the pavement is in
28 place.
29 4. Over-excavate and replace any portion of subgrade that becomes damaged or
30 unstable due to weather or construction activities prior to stabilizing the subgrade,
31 installing base material, or placing the pavement. This will be at no cost to the City.
32 5. Separate, remove, and dispose of unacceptable fill material as defined in Section 31
33 24 00 in accordance with Federal, State, and local regulations.
34 6. Maintain positive drainage in the excavated area to avoid damage to any existing
35 structures, proposed structures, and the roadway.

1 7. Shape slopes to avoid loosening material below or outside the proposed grade.

2 8. Remove and dispose of slides as directed.

4 B. Earth Cut

5 1. Excavate to finish grade or subgrade within acceptable subgrade tolerances.

6 2. Use approved embankment material compacted in accordance with 31 24 00 to
7 replace over-excavated material at no cost to City. Anticipated reasons for over
8 excavation can include, but are not limited to:

9 a. Excavation below an acceptable subgrade tolerance

10 b. Soils damaged due to weather or construction activities

11 3. Shape and compact subgrade in accordance with Section 31 24 00.

12 4. Subgrade Tolerances

13 a. Excavate to within 0.1 foot in all directions.

14 b. In areas of over excavation, provide fill material approved by the City at no cost
15 to City.

16 C. Rock Cut

17 1. Do not use dynamite or rock ripping within 500 feet of residences or commercial
18 development.

19 2. Blasting

20 a. Obtain City approval prior to any blasting.

21 b. Send notification at least 15 days in advance to all property owners within
22 1,000 feet of the blasting site.

23 c. Follow all OSHA regulations for explosives and blasting agents, including but
24 not limited to requirements in the OSHA Technical Manual Section 5, and
25 OSHA Laws and Regulations Standard 1926, Safety and Health Regulations for
26 Constructions.

27 d. Use only authorized workers with training, knowledge, or experience in the
28 field of transporting, storing, handling, and use of explosives.

29 1) Authorized workers also need to have working knowledge of State and
30 local laws and regulations pertaining to explosives.

31 e. If there are concerns that seismic vibrations may cause damage to adjacent
32 structures, provide:

33 1) A structural engineer to determine safe limits to prevent any damage.

34 2) All equipment, monitors, tools, and engineering design necessary at no cost
35 to the City.

36 f. Use blasting mats or other approved containment equipment to ensure that no
37 rocks or debris will be thrown into the air.

38 g. Comply with all City of Denton noise ordinances when blasting.

39 3. Excavate to finish grade or subgrade within acceptable subgrade tolerances.

40 4. For small pockets or thin layers, remove rock to at least 12-inches below subgrade.

41 5. Use approved embankment material compacted in accordance with 31 24 00 to
42 replace over excavated material at no cost to City.

43 D. Water for Construction

1. Provide water as needed for site preparation, compaction, dust control, and other incidental activities in accordance with local requirements in accordance with Section 01 35 13.

E. Dewatering

1. Dewatering is subsidiary to excavation and includes the installation and operation of all pumping, bailing, well-pointing, sumps, and draining necessary to keep the excavation free from groundwater, seepage water, water from storm drains, wastewater collection systems, ditches, creeks, ponds, and other sources.
2. Keep channels, trenches, pits, and other low point excavations drained as much as practical during construction at no cost to the City.
3. Construction will not be permitted in standing water.
4. Conform all discharge from dewatering activities to Federal, State, and local requirements in a manner approved by the City.
5. Control outlet velocities from dewatering discharges to prevent erosion.

F. Excavated Material

1. Maintain safe and convenient access to private and public properties adjacent to excavation activities unless specified in the Drawings. Obtain approval from the City for maintenance of access methods.
2. Acceptable fill material may be used for embankment in accordance with 31 24 00.
3. Stockpile acceptable excavated materials on-site in accordance with Sections 31 10 00 and 31 24 00. Proper erosion control and BMPs to be utilized in accordance with the Drawings, local guidelines, and approved by the City.

G. Methods of Excavation

1. Submit means and methods for review by the City prior for any method of excavation that is not using traditional excavation methods.
2. Comply with all Federal, State, and local regulations when developing and submitting for approval any alternative method.
3. If an alternative method is requested and approved after contract execution, perform excavation at no additional cost to the City beyond the stated excavation unit price in the bid form.

3.5 REPAIR

A. Repair the following at no cost to the City if any damage is caused due to excavation activities:

1. Adjacent concrete or asphalt pavement to remain
2. Adjacent sidewalk to remain
3. Adjacent curb or curb and gutter to remain
4. Adjacent subgrade or base material to remain
5. Utility piping, structures, and appurtenances
6. Irrigation systems including but not limited to sprinkler heads, conduit, and pipe.
7. Landscape beds or planters
8. Decorative hardscape or landscape features

- 1 9. Retaining walls
- 2 **3.6 RE-INSTALLATION [NOT USED]**
- 3 **3.7 SITE QUALITY CONTROL [NOT USED]**
- 4 **3.8 SYSTEM STARTUP [NOT USED]**
- 5 **3.9 ADJUSTING [NOT USED]**
- 6 **3.10 CLEANING [NOT USED]**
- 7 **3.11 CLOSEOUT ACTIVITIES [NOT USED]**
- 8 **3.12 PROTECTION [NOT USED]**
- 9 **3.13 MAINTENANCE [NOT USED]**
- 10 **3.14 ATTACHMENTS [NOT USED]**
- 11 **END OF SECTION**

12

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

13

SECTION 31 24 00**EMBANKMENT****PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Furnishing, placing, and compacting approved soils for construction.

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.
3. Section 31 25 14 - Erosion and Sedimentation Controls.

1.2 PRICE AND PAYMENT PROCEDURES**A. Measurement and Payment****1. Embankment****a. Measurement**

- 1) Measured per cubic yard in its final position using the average end area method of Embankment performed. Limits of measurement shown in the Drawings.

b. Payment

- 1) The work performed in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per cubic yard for "Embankment."

c. The price bid shall include:

- 1) Transporting or hauling material
- 2) Placing, compacting, and finishing Embankment
- 3) Construction Water
- 4) Dust Control
- 5) Proof Rolling
- 6) Disposal of excess materials
- 7) Reworking or replacement of undercut material

2. Select Fill Embankment**a. Measurement**

- 1) Measured cubic yard in its final position using the average end area method of Select Fill Embankment performed. Limits of measurement shown in the Drawings.

b. Payment

- 1) The work performed in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per cubic yard for "Select Fill Embankment".

c. The price bid shall include:

- 1) Transporting or hauling material
- 2) Placing, compacting, and finishing Embankment
- 3) Construction Water
- 4) Dust Control
- 5) Clean-up
- 6) Proof Rolling
- 7) Disposal of excess materials
- 8) Reworking or replacement of undercut material

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.
2. ASTM Standards:
 - a. D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
 - b. D4318, Test Procedure for Determining Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 - c. D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.
3. TEX-115-E, FIELD METHOD FOR DETERMINING IN-PLACE DENSITY OF SOILS AND BASE MATERIALS

1.4 ADMINISTRATIVE REQUIREMENTS

A. Permits

1. For commercial and residential construction, a Clear and Grade Permit is required.
 - a. No excavation or embankment activities will be allowed without an executed construction contract and an assigned City inspector.
 - b. Any excavation or embankment activities performed prior to an executed construction contract and an assigned City inspector is subject to additional testing, compaction, and site requirements at no cost to the City.

B. Sequencing

1. Install all erosion control measures in accordance with Section 31 25 14 prior to commencing any earthwork activities.
2. Complete all site clearing in accordance with Section 31 10 00 prior to commencing any earthwork activities.

C. Pre-Earthwork Meeting

1. A Pre-Earthwork Meeting is not required for Capital Improvement projects.
2. Hold a Pre-Earthwork meeting at the same time as the Pre-Site Clearing Meeting. Invite the City and appropriate representatives.

3. Clearly mark all the following items prior to the meeting:
 - a. All requirements for pre-site clearing meeting in accordance with 31 10 00.
 - b. Excavation limits
 - c. Cut/fill stakes
4. Have the SWPPP in place and inspected by Watershed Protection in accordance with Section 01 57 13 prior to Excavation activities.
5. Determine any site-specific constraints or concerns prior to meeting for review.

1.5 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00.
- B. All submittals shall be approved by the City prior to commencement of any lime treating activities.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Information Submittal

1. Equipment Information

- a. Submittal for all major equipment to include:
 - 1) Equipment name
 - 2) Size
 - 3) Intended use

1.7 CLOSEOUT SUBMITTALS

A. Test and Evaluation Reports

1. All test reports generated during testing.

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING

A. Storage and Handling Requirements

1. Secure and maintain a location to store the material in accordance with Section 01 66 00.
2. Within Existing Rights-of-Way (ROW)
 - a. Store soil within existing ROW, easements, or temporary construction easements, unless specifically disallowed in the Contract Documents.
 - b. Do not block drainage ways, inlets, or driveways.
 - c. When the Work is performed in active traffic areas, store materials only in areas barricaded as provided in the traffic control plans.
 - d. In non-paved areas, do not store material on the root zone of any trees or in landscaped areas.
3. Designated Storage Areas
 - a. If the Contract Documents do not allow the storage within the ROW, easement or temporary construction easement, secure and maintain an adequate storage location.
 - b. Provide an affidavit verifying rights have been secured to store the materials on private property.

c. Do not block drainage ways.

1.11 FIELD CONDITIONS

A. Ambient Conditions

1. Surface temperature must be at least 40°F and the ambient temperature must be 45°F and rising.
2. Do not install embankment during or shortly after rain events which prevent proper work placement of the material and compaction.
 - a. Prior to resuming compaction operations:
 - 1) Let soil dry to optimal density.
 - 2) Remove muddy material off the surface to expose firm and compacted materials.

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS

2.1 CITY-FURNISHED PRODUCTS [NOT USED]

2.2 MATERIALS

A. General

1. Furnish material capable of forming a stable embankment.
2. Furnish material free from trees, stumps, roots, vegetation, or other deleterious materials.

B. Acceptable Fill Material

1. In-situ or imported soils classified as CL, CH, SC, or GC in accordance with ASTM D2487.
2. Free from deleterious materials, boulders over 6 inches in size, shale and organics.
3. Can be placed free from voids.
4. Has 20 percent passing the number 200 sieve.
5. Meets the requirements of Table 1.

Table 1 – Acceptable Fill Material Requirements

Property	Test Method	Specification Limit
Liquid Limit (LL)	Tex-104-E	≤ 50
Plasticity Index (PI)	Tex-106-E	≤ 35
Sulfate Limit	Tex-145-E	≤ 3000 ppm
Bar Linear Shrinkage	Tex-107-E	≥ 2

C. Blended Fill Material

1. In-situ soils classified as SP, SM, GP, or GM in accordance with ASTM D2487.
2. Blended with in-situ or imported Acceptable Fill material in accordance with the requirements of this Section.

3. Free from deleterious materials, boulders over 6 inches in size, shale and organics.
4. Has 20 percent passing the number 200 sieve.
5. Final blended product meets the requirements of Table 1.

D. Unacceptable Fill Material

1. In-situ soils classified as ML, MH, PT, OL, or OH in accordance with ASTM D2487

E. Select Fill Material

1. Classified as SC or CL in accordance with ASTM D2487
2. Free from deleterious materials, boulders over 6 inches in size, shale and organics.
3. Can be placed free from voids.
4. Has 20 percent passing the number 200 sieve.
5. Meets the requirements of Table 2.

Table 2 – Select Fill Material Requirements

Property	Test Method	Specification Limit
Liquid Limit (LL)	Tex-104-E	≤ 35
Plasticity Index (PI)	Tex-106-E	$8 < PI \leq 20$
Sulfate Limit	Tex-145-E	≤ 2000 ppm
Bar Linear Shrinkage	Tex-107-E	≥ 2

2.3 ACCESSORIES [NOT USED]

2.4 SOURCE QUALITY CONTROL

A. Borrow material shall be tested prior to delivery to the Site.

1. Provide Proctor Test results, Gradation, and Atterberg Limits for Borrow material from each source.
 - a. All testing listed above shall be performed in accordance with ASTM D698, D6913, and D4318 respectively.

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION

A. Protection of In-Place Conditions

1. Pavement
 - a. Conduct activities in such a way that does not damage existing pavement designated to remain.

b. Repair or replace any pavement damaged due to the negligence of the contractor outside the limits designated for pavement removal at no additional cost.

2. Trees

a. Flag and protect all trees designated to remain in accordance with Section 31 10 00.

b. Conduct embankments in a manner such that there is no damage to the tree canopy.

c. Prune or trim tree limbs as specified in the Drawings or as directed by City.

1) Pruning or trimming may only be accomplished with equipment specifically designed for tree pruning or trimming.

3. Above ground Structures

a. Protect all above ground structures adjacent to the construction.

B. Surface Preparation

1. Backfill stump holes or other small incidental excavations due to site clearing with material of same properties as in-situ material.

2. Scarify base soil surface on which the embankment will be constructed to a minimum depth of 6 inches.

3. Bench slopes before placing new material.

3.4 EMBANKMENT

A. General

1. Provide material type as specified in the Drawings.

2. Begin filling in the lowest section or the toe of the work area.

3. When fill is placed directly or upon older fill, remove debris and any loose material and proof roll existing surface.

4. After spreading the loose lifts to required thickness and adjusting its moisture content as necessary, simultaneously recompact scarified material with the placed embankment material.

5. Compact material in loose lifts no greater than 8 inches.

6. Roll with enough passes to achieve the minimum required compaction.

7. Provide water sprinkled as necessary to achieve required moisture levels for specified compaction.

8. Do not add additional lifts until the entire previous lift is properly compacted.

B. Surface Water Control

1. Grade surface horizontally but provide with sufficient longitudinal and transverse slope to allow for runoff of surface water from every point.

2. Conduct fills so no obstruction to drainage from any other sections of fill is created.

3. Install temporary dewatering sumps in low areas during filling where excess amounts of runoff collect.

4. Compact uniformly throughout. Keep surfaces of fill reasonably smooth and free from humps and hollows that would prevent proper uniform compaction.

C. Earth Embankments

1. Construct embankments in successive layers, evenly distributing materials in lengths suited for sprinkling and rolling.
2. Move the material dumped in piles or windrows by blading or by similar methods and incorporate it into uniform layers.
3. Construct embankments in layers approximately parallel to the finished grade of the street.
4. Feather edge or mix abutting layers of dissimilar material for at least 100 feet to ensure no abrupt changes in the material.
5. Break down clods or lumps of material and mix embankment until a uniform material is attained.
6. Establish grade and shape to the typical sections specified in the Drawings.
7. Maintain finished sections of embankment to the grade and compaction requirements until the project is accepted.

D. Rock Embankments

1. Rock Embankments for roadways are only allowed when specified in the Drawings.
2. Construct rock embankments in successive layers for the full width of the roadway cross-section with a depth of 18 inches or less.
3. The layer depth for large rock sizes shall not exceed a depth of 18 inches in any case.
4. Fill voids created by the large stone matrix with smaller stones during the placement and filling operations.
5. Ensure the depth of the embankment layer is greater than the maximum dimension of any rock.
6. Do not place rock greater than 18 inches in its maximum dimension.
7. Do not place rock embankments in any location where future utilities are anticipated.
8. Construct the final layer with graded material so the density and uniformity is in accordance with compaction requirements.

E. Density Control

1. Determine maximum dry density and moisture content using ASTM D698 and submit moisture-density curves to City for review.
2. Compact each lift to meet the following requirements:
 - a. For soils with a PI less than 35, compact to 98% of maximum dry density, plus or minus 2%.
 - b. For soils with a PI greater than 35, compact to at least 98% of maximum dry density.

F. Maintenance of Moisture and Reworking

1. Maintain the density and moisture content once all requirements are met.
2. For soils with a PI greater than 15, maintain the moisture content no lower than 4 percentage points below optimum.
3. Rework the material to obtain specified compaction when the material loses the required stability, density, moisture, or finish.

- 1 4. Alter the compaction methods and procedures on subsequent work to obtain
2 specified density as directed by City.

3 **3.5 REPAIR**

- 4 A. Repair the following at no cost to the City if any damage is caused due to Embankment
5 activities:

- 6 1. Adjacent concrete or asphalt pavement to remain
7 2. Adjacent sidewalk to remain
8 3. Adjacent curb or curb and gutter to remain
9 4. Adjacent subgrade or base material to remain
10 5. Utility pipes
11 6. Irrigation systems including but not limited to sprinkler heads, conduit, and pipe.
12 7. Landscape beds or planters
13 8. Decorative hardscape or landscape features
14 9. Retaining walls

15 **3.6 RE-INSTALLATION [NOT USED]**

16 **3.7 FIELD QUALITY CONTROL**

- 17 A. Field Tests and Inspections

18 1. Proctors

- 19 a. Perform Proctor Tests in accordance with ASTM D698.
20 b. Notify the City if the characteristic of the soil changes.
21 c. Perform new Proctors for varying soils:
22 1) When indicated in the geotechnical investigation in the Appendix
23 2) If notified by the Engineer
24 3) At the convenience of the City
25 d. For Embankments where different soil types are present and are blended, the
26 Proctors shall be based on the mixture of those soils.

27 2. ProofRolling

- 28 a. City must be on-site during proof rolling operations.
29 b. Make at least two passes with the proof roller, offsetting each trip by at most
30 one tire width.
31 c. Correct areas of rutting or pumping and unstable or non-uniform areas in
32 accordance with this Section.

33 3. Density Testing of Embankments

- 34 a. Density Testing shall be in accordance with ASTM D6938.
35 b. City must be on site during density testing.
36 c. For Embankments under future pavement:
37 1) Perform density testing twice per working day when compaction operations
38 are being conducted.
39 2) Measure density every 100' along corridor.
40 3) City to determine density testing locations.
41 d. For Embankments not under future pavement or structures:
42 1) The City will perform density testing once per working day when
43 compaction operations are being conducted.

- 1 2) Measure density every 250' along embankment.
 2 3) City to determine density testing locations.
 3 e. Test reports shall include:
 4 1) Location of test by station number
 5 2) Time and date of test
 6 3) Depth of testing
 7 4) Field moisture
 8 5) Dry density
 9 6) Proctor identifier
 10 7) Percent Proctor Density
- 11 B. Non-Conforming Work
 12 1. All non-conforming work shall be removed and replaced at no additional cost to the
 13 City.
- 14 **3.8 SYSTEM STARTUP [NOT USED]**
 15 **3.9 ADJUSTING [NOT USED]**
 16 **3.10 CLEANING [NOT USED]**
 17 **3.11 CLOSEOUT ACTIVITIES [NOT USED]**
 18 **3.12 PROTECTION [NOT USED]**
 19 **3.13 MAINTENANCE [NOT USED]**
 20 **3.14 ATTACHMENTS [NOT USED]**

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
6/14/2024		Added TXDOT reference standard TEX-115-E
6/14/2024		Excluded shale material from all backfill options

SECTION 31 25 14**EROSION AND SEDIMENT CONTROL****PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Installation and maintenance of temporary control measures necessary to prevent and control soil erosion, sedimentation, and water pollution.
2. Preparation and implementation of Contractor produced Erosion Control Plan.

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.
3. Section 32 05 26 – Aggregates for Exterior Improvements.

1.2 PRICE AND PAYMENT PROCEDURES**A. Measurement and Payment****1. Silt Fence****a. Measurement**

- 1) Measured per linear foot of Silt Fence installed.

b. Payment

- 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per linear foot for "Silt Fence" installed.

c. The price bid shall include:

- 1) Furnishing and installing Silt Fence as specified by the Drawings
- 2) Posts
- 3) Filter fabric
- 4) Net reinforcement
- 5) Fasteners
- 6) Stone overflows
- 7) Safety caps
- 8) Cleaning
- 9) Disposal of silt
- 10) Repair of damaged Silt Fence

2. Check Dam**a. Measurement**

- 1) Measured per linear foot of Check Dam installed.

b. Payment

- 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per linear foot for "Check Dam" installed.
- c. The price bid shall include:
 - 1) Furnishing and installing Check Dam as specified by the Drawings
 - 2) Aggregate, wire reinforcement, and filter fabric
 - 3) Excavation
 - 4) Loading, unloading, hauling, and storing
 - 5) Cleaning
 - 6) Disposal of silt
 - 7) Repair of damaged Check Dam
3. Organic Filter Tube
 - a. Measurement
 - 1) Measured per linear foot of Organic Filter Tube installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per linear foot for "Organic Filter Tube" installed.
 - c. The price bid shall include:
 - 1) Furnishing and installing Organic Filter Tube as specified by the Drawings
 - 2) Containment mesh
 - 3) Core material
 - 4) Posts
 - 5) Rock bags
 - 6) Cleaning
 - 7) Disposal of silt
 - 8) Repair of damaged Organic Filter Tube
4. Inlet Protection
 - a. Measurement
 - 1) Measured per each of Inlet Protection installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Inlet Protection" installed.
 - c. The price bid shall include:
 - 1) Furnishing and installing Inlet Protection as specified by the Drawings
 - 2) All items pertaining to hog wire for erosion control as needed
 - 3) Loading, unloading, hauling, and storing
 - 4) Cleaning
 - 5) Disposal of silt
 - 6) Repair of damaged Inlet Protection items
5. Erosion Control Blanket
 - a. Measurement
 - 1) Measured per square yard of Erosion Control Blanket installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per square yard for "Erosion Control Blanket" installed.

- c. The price bid shall include:
 - 1) Furnishing and installing Erosion Control Blanket as specified by the Drawings
 - 2) Blanket and staples
 - 3) Loading, unloading, hauling, and storing
 - 4) Cleaning
 - 5) Disposal of silt
 - 6) Repair of damaged Erosion Control Blanket
6. Stabilized Construction Exit
 - a. Measurement
 - 1) This item is considered subsidiary to the various items bid.
 - b. Payment
 - 1) The work performed and the materials furnished in accordance with this item are subsidiary to the various items bid and no other compensation will be allowed.
7. Mulching
 - a. Measurement
 - 1) Measured square yard of Mulching installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per square yard for "Mulching" installed.
 - c. The price bid shall include:
 - 1) Furnishing and installing Mulching as specified by the Drawings
 - 2) Loading, unloading, hauling, and storing
8. Pipe Inlet Sediment Trap
 - a. Measurement
 - 1) Measured per each Pipe Inlet Sediment Trap installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Pipe Inlet Sediment Trap" installed.
 - c. The price bid shall include:
 - 1) Furnishing and installing Pipe Inlet Sediment Trap as specified by the Drawings
 - 2) Filter stone
 - 3) Loading, unloading, hauling, and storing
 - 4) Cleaning
 - 5) Disposal of silt
 - 6) Repair of damaged Pipe Inlet Sediment Traps
9. Stone Outlet Sediment Trap
 - a. Measurement
 - 1) Measured per each Stone Outlet Sediment Trap installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Stone Outlet Sediment Trap" installed.
 - c. The price bid shall include:

- 1) Furnishing and installing Stone Outlet Sediment Trap as specified by the Drawings
- 2) Filter stone
- 3) Loading, unloading, hauling, and storing
- 4) Cleaning
- 5) Disposal of silt
- 6) Repair of damaged Stone Outlet Sediment Traps
10. Turf Reinforcement Mat
 - a. Measurement
 - 1) Measured square yard of Turf Reinforcement Mat installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per square yard for "Turf Reinforcement Mat" installed.
 - c. The price bid shall include:
 - 1) Furnishing and installing Turf Reinforcement Mat as specified by the Drawings
 - 2) Loading, unloading, hauling, and storing
 - 3) Cleaning
 - 4) Disposal of silt
 - 5) Repair of damaged Pipe Inlet Sediment Traps items
11. Dewatering Controls
 - a. Measurement
 - 1) This item is considered subsidiary to the various items bid.
 - b. Payment
 - 1) The work performed and the materials furnished in accordance with this item are subsidiary to the various items bid and no other compensation will be allowed.
12. Stormwater Pollution Prevention Device Installation
 - a. Measurement
 - 1) Measurement for this item shall be by lump sum.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item shall be paid for at the lump sum price bid for all "Stormwater Pollution Prevention Device Installation".
 - c. The price bid shall include:
 - 1) Furnishing and installing all items under Stormwater Pollution Prevention Device Installation as specified by the Drawings
 - 2) Excavation
 - 3) Loading, unloading, hauling, and storing
 - 4) Cleaning
 - 5) Disposal of silt
 - 6) Repair of damaged Storm Water Pollution Prevention Devices
13. Remove Stormwater Pollution Prevention Devices
 - a. Measurement
 - 1) Measurement for this item shall be by lump sum.

- 1 b. Payment
- 2 1) The work performed and materials furnished in accordance with this item
- 3 shall be paid for at the lump sum price bid for all "Remove Stormwater
- 4 Pollution Prevention Devices."
- 5 c. The price bid shall include:
- 6 1) Removing all items previously installed as part of the Stormwater Pollution
- 7 Prevention Plan as specified by the Drawings
- 8 2) Loading, unloading, and hauling
- 9 3) Cleaning
- 10 4) Disposal of silt

11 1.3 REFERENCES

12 A. Abbreviations and Acronyms

- 13 1. Environmentally Sensitive Area: ESA

14 B. Reference Standards

- 1 1. Reference standards cited in this Section refer to the current reference standard
- 2 published at the time of the latest revision date logged at the end of this Section
- 3 unless a date is specifically cited.
- 4 2. City of Denton, Stormwater Design Criteria Manual
- 5 3. North Central Texas Council of Governments (NCTCOG) Integrated Stormwater
- 6 Management (iSWM) Technical Manual.
- 7 4. Texas Department of Transportation, Standard Specifications for Construction and
- 8 Maintenance of Highways, Streets, and Bridges (TxDOT):
- 9 a. Item 169, Soil Retention Blankets.
- 10 5. Texas Department of Transportation (TxDOT), Departmental Material
- 11 Specifications (DMS):
- 12 a. DMS-6200, Filter Fabric.
- 13 b. DMS-6230, Temporary Sediment Control Fence Fabric.
- 14 c. DMS-6370, Erosion Control Blankets.

15 1.4 ADMINISTRATIVE REQUIREMENTS

16 A. Sequencing

- 17 1. Ensure erosion control measures are fully installed prior to the commencement of
- 18 any earth disturbing activities.
- 19 2. If required, ensure ESA protection measures are fully installed prior to the
- 20 commencement of any earth disturbing activities.
- 21 3. Contact Watershed Protection division for initial inspection of installed erosion
- 22 control or ESA protection measures prior to the commencement of any earth
- 23 disturbing activities. Watershed@cityofdenton.com
- 24 4. On phased projects, final stabilization shall be completed and Erosion and Sediment
- 25 Control devices removed from each phase as construction is completed.

26 1.5 SUBMITTALS

- 27 A. Submittals shall be in accordance with Section 01 33 00.

- 28 B. All submittals shall be approved by the City prior to delivery.

29 **1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS**

30 A. Storm Water Pollution Prevention Plan (SWPPP) submittals in accordance with Section
31 01 57 13 where land disturbance exceeds 1 acre.

32 B. Erosion Control Plan submittal when Contractor is responsible for creating site specific
33 erosion control plan.

34 1. Plan content and requirements as specified in the Drawings

35 2. Plan to adhere to the general standards of the City of Denton's Development Code
36 Section 7.3.5

37 C. Product Data

38 1. Provide product data from each manufacturer supplying Erosion and Sediment
39 Control devices and accessories.

40 2. Product data sheets for all products to include:

41 a. Manufacturer name

- 1 b. Date
- 2 c. Material description
- 3 d. Point of delivery
- 4 e. Data and test results as specified in this Section
- 5 f. Manufacturer Recommended Storing Data, if applicable
- 6 g. Application Recommendations, if applicable

7 **1.7 CLOSEOUT SUBMITTALS [NOT USED]**

8 **1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

9 **1.9 QUALITY ASSURANCE [NOT USED]**

10 **1.10 DELIVERY, STORAGE, AND HANDLING**

11 A. Storage and Handling Requirements

- 12 1. Secure and maintain a location to store the material in accordance with Section 01
- 13 66 00.

- 14 2. Store all storm water pollution prevention materials in accordance with
- 15 manufacturer's recommendations.

16 **1.11 SITE CONDITIONS [NOT USED]**

17 **1.12 WARRANTY [NOT USED]**

18 **PART 2 - PRODUCTS**

19 **2.1 CITY-SUPPLIED PRODUCTS [NOT USED]**

20 **2.2 MATERIALS**

21 A. Silt Fence

22 1. Fabric

- 23 a. Provide fabric in accordance with the following criteria:

24

Property	Test Method	Specification Limit
Tensile Strength	ASTM D4632	90-lbs
Puncture Rating	ASTM D4833	60-lbs
Mullen Burst Rating	ASTM D3796	280-psi
Apparent Opening Size	ASTM D4751	Sieve No. 30 to No. 100
Ultraviolet Resistance	ASTM D4355	70 percent min

25

26 2. Posts

- 27 a. Provide steel T-section or L-section posts, 1.3 pounds per linear foot, and 4 feet
- 28 in length minimum.
- 29 b. Provide plastic caps on all steel posts in areas exposed to pedestrian traffic.
- 30 c. Wood posts may be approved by City if project duration is expected to be less
- 31 than 90 days.

32 3. Net Reinforcement

- a. Provide net reinforcement of at least 12 gauge galvanized welded wire mesh, with a maximum opening size of 2x2 inches.

4. Stone Overflows

- a. Provide 1 1/2 inch washed stone aggregate in accordance with Section 32 05 26.

B. Check Dam

1. Aggregate

- a. Provide 3 to 6 inch aggregate in accordance with Section 32 05 26 for check dam heights of 24 inches or less.
b. Provide 4 to 8 inch aggregate in accordance with Section 32 05 26 for check dam greater than 24 inches in height.

2. Wire

- a. If required, provide mesh consisting of minimum 20 gauge galvanized wire.

3. Fabric

- a. For check dams greater than 18 inches in height, provide filter fabric in accordance with the following criteria:

Property	Test Method	Specification Limit
Tensile Strength	ASTM D4632	250-lbs
Puncture Rating	ASTM D4833	135-lbs
Mullen Burst Rating	ASTM D3796	420-psi
Apparent Opening Size	ASTM D4751	Sieve No. 20 max
Ultraviolet Resistance	ASTM D4355	20 percent min

C. Organic Filter Tube

1. Containment Mesh

- a. Provide biodegradable, photodegradable, or recyclable containment mesh with a minimum rated life of one year under normal site conditions, such as burlap, twine, UV photodegradable plastic, or polyester.
1) Obtain approval from the City for use of any other material.
b. Provide recyclable containment mesh for temporary organic filter tube installation.
c. Provide biodegradable or photodegradable containment mesh when organic filter tube will remain in place as part of vegetative system.

2. Core Material

- a. Provide biodegradable or recyclable core material such as compost, mulch, or coir.
1) Obtain approval from the City for use of any other material.

3. Posts

- a. Provide steel T-section or L-section posts, 1.3 pounds per linear foot or 2 inches by 2 inches wooden posts.
b. Provide posts at least 6 inches longer than the outside diameter of the Organic Filter Tube.

D. Inlet Protection

1. Provide Inlet Protection comprised of Organic Filter Tubes or rock bags for erosion control in accordance with this Section.

E. Erosion Control Blanket

1. Blanket
 - a. In accordance with DMS 6370.
2. Staples
 - a. In accordance with the Erosion Control Blanket manufacturer recommendations.

F. Stabilized Construction Exit

1. Aggregate
 - a. Provide 3 to 6 inch aggregate in accordance with Section 32 05 26.

G. Mulching

1. Provide type of organic mulching as specified in the Drawings.

H. Pipe Inlet Sediment Trap

1. Riprap
 - a. Provide 6 to 12 inch Dry Stone Riprap in accordance with Section 31 37 00.
2. Filter Stone
 - a. Provide 1 1/2 inch washed stone aggregate in accordance with Section 32 05 26.
3. Wire
 - a. Provide mesh consisting of minimum 20 gauge galvanized wire with 1/2 inch by 1/2 inch openings.
4. Fabric
 - a. Provide Filter Fabric meeting the following criteria:

Property	Test Method	Specification Limit
Tensile Strength	ASTM D4632	250-lbs
Puncture Rating	ASTM D4833	135-lbs
Mullen Burst Rating	ASTM D3796	420-psi
Apparent Opening Size	ASTM D4751	Sieve No. 20 max
Ultraviolet Resistance	ASTM D4355	20 percent min

5. Concrete Block
 - a. Provide standard 8-inch x 8-inch x 16-inch concrete masonry units in accordance with ASTM C139.

I. Stone Outlet Sediment Trap

1. Riprap
 - a. Provide 6 to 12 inch Dry Stone Riprap in accordance with Section 31 37 00.
2. Filter Stone
 - a. Provide 1 1/2 inch washed stone aggregate in accordance with Section 32 05 26.
3. Fabric
 - a. Provide Filter Fabric in accordance with the following criteria:

Property	Test Method	Specification Limit
Tensile Strength	ASTM D4632	250-lbs
Puncture Rating	ASTM D4833	135-lbs
Mullen Burst Rating	ASTM D3796	420-psi
Apparent Opening Size	ASTM D4751	Sieve No. 20 max
Ultraviolet Resistance	ASTM D4355	20 percent min

J. Turf Reinforcement Mat

1. Provide Turf Reinforcement Mats in accordance with TxDOT Item 169 Approved Products List, *Erosion Control Approved Products* and in accordance with the following criteria:

Property	Test Method	Specification Limit
Minimum Thickness	ASTM D6525	0.25 in
Ultraviolet Resistance	ASTM D4355	80 percent
Tensile Strength	ASTM D6818	175 lbs/ft

K. Dewatering Controls

1. Sediment Filter Bag

- a. Provide sediment filter bags made of non-woven, needle-punched, geotextile that meets the following criteria:

Property	Test Method	Specification Limit
Tensile Strength	ASTM D4632	250-lbs
Puncture Rating	ASTM D4833	135-lbs
Mullen Burst Rating	ASTM D3796	420-psi
Ultraviolet Resistance	ASTM D4355	20 percent min
Water Flow Rate	ASTM D4491	85 to 110 gpm/ft ²

2. Temporary Sediment Tank

- a. Provide compartmented container with a storage volume equal to 1 cubic foot for each gallon per minute of pump discharge capacity.

2.3 ACCESSORIES [NOT USED]

2.4 SOURCE QUALITY CONTROL [NOT USED]

PART 3 - EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION

A. General

1. Remove trees, brush, stumps, and other objectionable material that will interfere with the construction of the erosion control measure.
- B. Erosion Control Blanket
 1. Remove rocks, dirt clods, stumps, and other objectionable material that will prevent the mat from lying in direct contact with the soil.
- C. Mulching
 1. Fertilize and treat soil prior to mulching installation when used with final vegetation.
 - a. Fertilization and soil treatment are not required when using mulching with hydroseeding or when seed is spread during winter months.
- D. Turf Reinforcement Mat
 1. Remove rocks, dirt clods, stumps, and other objectionable material that will prevent the mat from lying in direct contact with the soil.
- 3.4 INSTALLATION**
- A. Silt Fence
 1. Provide silt fence near the downstream perimeter of a disturbed area to intercept sediment from sheet flow.
 2. Install posts 18 inches deep, maximum 6 feet on center.
 3. Dig 6-inch x 6-inch trench on uphill side of fence and embed fabric and wire mesh. Backfill the trench.
 4. Attach net reinforcement to posts with clips for steel posts or staples for woodposts in at least four equally spaced locations per post.
 5. Fasten fabric to top of net reinforcement at a maximum spacing of 15 inches.
 6. Locate splices in fabric at a post and provide a 3-foot overlap ensuring no leakage or bypass.
 7. Install stone overflow structures at low points or spaced at approximately 300 feet if there is no apparent low point.
 8. Turn last 10 feet of Silt Fence slightly uphill to prevent bypass.
 9. Repair or replace any posts, net reinforcement, or fabric that are bent, torn, or otherwise unable to function as intended in accordance with this Section.
- B. Check Dam
 1. Place the aggregate to the lines, height, and slopes specified in the Drawings.
 2. Place Check Dams perpendicular to the direction of flow.
- C. Organic Filter Tube
 1. Install Organic Filter Tubes near the downstream perimeter of a disturbed area to intercept sediment from sheet flow.
 2. When placed on soil, excavate a 1-inch to 2-inch deep bedding trench along the length of the Organic Filter Tubes.
 3. Secure Organic Filter Tubes using posts to prevent displacement as a result of normal rain events, damage to the logs, and flow from penetrating under the logs.
 - a. Rock bags may be used in place of posts on paved surfaces.

4. Overlap ends of Organic Filter Tubes by at least 18 inches and secure ends together preventing gaps from forming.

5. Turn last 10 feet of Organic Filter Tubes slightly uphill to prevent bypass.

D. Inlet Protection

1. Install prefabricated inlet protection systems in accordance with manufacturer's instructions.

2. Install filter fabric as specified in the Drawings and in accordance with this Section.

3. Install inlet protection systems to provide 2-inch overflow capability to allow storm water overflow during extreme storm events or when filter media on protection device clogs.

E. Erosion Control Blanket

1. Use an Erosion Control Blanket anywhere seeding is to be used and the slope is steeper than a 6:1 slope.

2. Use Turf Reinforcement Mat when stabilizing slopes of 2:1 or steeper.

3. Provide blanket on sod locations only when specified in the Drawings.

4. Dig 6 inch trench along the entire perimeter of the installation area.

5. Lay Erosion Control Blanket into trench and backfill with compacted soil.

6. Fasten Erosion Control Blanket in accordance with manufacturer's instructions.

7. Ensure staples are installed parallel to the direction of flow.

8. Overlap ends of Erosion Control Blanket by a minimum of 3 feet, and longitudinal edges by 6 inches.

9. Staple Erosion Control Blanket at all critical channel points and all overlaps.

10. ECBs shall be installed vertically down slope (across contours) on cut/fill slopes and embankments and along contours (parallel to flow) in swales and drainage ditches.

11. Unless the ECB is seeded to establish vegetation, perimeter applications shall be limited to thirty feet wide drainage areas (i.e. linear construction projects) for an 8 feet width of ECB.

F. Stabilized Construction Exit

1. Install stabilized construction exit as specified in the Drawings.

2. Install stabilized construction exits at any point where traffic will be leaving a construction site to or from a street, alley, sidewalk, or parking area.

3. Slope stabilized construction exit away from offsite paved surfaces or incorporate a drainage swale to prevent runoff from leaving the construction site.

4. Do not place stabilized construction exits at the lowest point on the construction site or on top of utility lines.

5. Minimum width of 15 feet for one-way and 20 feet for two-way.

G. Mulching

1. Spread organic mulch by hand or mechanical means providing complete, uniform coverage of the specified area.

2. Install mulching to a thickness between 1 to 2 inches.

3. Anchor mulching by application of fiber mulch binder, synthetic mulch binder, using a tractor-drawn crimper to punch into the soil, or by placing netting above the mulch and stapled into the ground when placed on slopes of 3:1 or steeper.
4. Do not use mulching on slopes of 1.5:1 or steeper.

H. Pipe Inlet Sediment Trap

1. Install pipe inlet sediment trap as specified in the Drawings.
2. Provide a stormwater and sediment storage area upslope of the pipe inlet sediment trap to a minimum volume equal to the runoff calculated from the temporary control design storm.
3. Provide side slopes surrounding the storage area at 2:1 or flatter.
4. Install the pipe inlet sediment trap to a maximum height of half the inlet pipe diameter.
5. Install pipe inlet sediment trap to provide 2-inch overflow capability to allow storm water overflow during extreme storm events or when filter media on protection device clogs.

I. Stone Outlet Sediment Trap

1. Install stone outlet sediment trap as specified in the Drawings.
2. Provide a stormwater and sediment storage area upslope of the pipe inlet sediment trap to a minimum volume equal to the runoff calculated from the temporary control design storm.
3. Install the pipe inlet sediment trap to a maximum height of half the inlet pipe diameter.
4. Grade side slopes surrounding the storage area at 2:1 or flatter.
5. Install pipe inlet sediment trap to provide 2-inch overflow capability to allow storm water overflow during extreme storm events or when filter media on protection device clogs.

J. Turf Reinforcement Mat

1. Install turf reinforcement mats as specified in the Drawings and manufacturer's recommendations.
2. Install turf reinforcement mats immediately after completing grading of the slope or channel, and at most within 14 days after completing the grading.
3. Install turf reinforcement mats vertically down slope on steep cut/fill slopes, embankments, and steep channel slopes above the water surface level.
4. Install turf reinforcement mats horizontally (parallel to flow) for channel slopes below the water surface level.
5. Dig 6 inch trench along the entire perimeter of the installation area.
6. Lay turf reinforcement mat into trench and backfill with compacted soil.
7. Fasten turf reinforcement mat in accordance with manufacturer's instructions.
8. Ensure staples are installed parallel to the direction of flow.
9. Overlap ends of turf reinforcement mat by a minimum of 3 feet, and longitudinal edges by 6 inches.
10. Staple turf reinforcement mat at all critical channel points and all overlaps.

1 3.5 REPAIR

- 2 1. Repair any controls determined to no longer be functioning as intended in
- 3 accordance with this Section.
- 4 2. Repair devices as soon as exposed ground has dried sufficiently to prevent further
- 5 damage from equipment operations needed for repairs.

6 3.6 RE-INSTALLATION [NOT USED]**7 3.7 FIELD QUALITY CONTROL****8 A. Field Inspections**

- 9 1. Inspect all storm water pollution prevention controls at least once every 7 calendar
- 10 days.
- 11 2. Inspect dewatering pumps and sediment controls hourly while pumps are in
- 12 operation.

13 3.8 SYSTEM STARTUP [NOT USED]**14 3.9 ADJUSTING [NOT USED]****15 3.10 CLEANING [NOT USED]****16 3.11 CLOSEOUT ACTIVITIES [NOT USED]****17 3.12 PROTECTION [NOT USED]****18 3.13 MAINTENANCE****19 A. General**

- 20 1. If a storm water pollution prevention control ceases to function as intended, repair
- 21 and replace the device or any portions necessary. Repeated failure indicates a
- 22 device is insufficient and additional or different Erosion and Sediment Control
- 23 devices must be selected.
- 24 2. Remove sediment, debris, and litter from all devices as necessary to maintain
- 25 intended operation.
- 26 3. Continue maintenance of all erosion and sediment control devices until vegetative
- 27 cover reaches 70 percent density, as determined by the City.

28 B. Check Dam

- 29 1. Remove silt when it reaches a depth equal to one-third the height of the dam or one
- 30 foot, whichever is less.

31 C. Dewatering Controls

- 32 1. Repair areas eroded due to dewatering pumping and install erosion control devices
- 33 to prevent further erosion.
- 34 2. Clean sediment tanks when they become half full of sediment.

35 3.14 ATTACHMENTS [NOT USED]

36

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
6/14/24		Added ESA protection measures to Section 1.4; Removed Watershed Protection individual contact information from Section 1.4
6/14/24		Removed organic filter tubes and rock bags from inlet protection under 3.4.D
6/14/24		Removed presence of Watershed Protection from inspection requirement under 3.7

SECTION 32 11 23 FLEXIBLE BASE COURSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Foundation course for surface course or other base course composed of flexible base constructed in one or more courses in accordance with the typical section specified in the Drawings.

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.
3. Section 32 05 16 – Aggregates for Exterior Improvements.

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Flexible Base

a. Measurement

- 1) Measured by the square yard of Flexible Base Course installed.

b. Payment

- 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per square yard for Flexible Base Course installed for:
 - a) Various depths.
 - b) Various grades.
 - c) Various types.

c. The price bid shall include:

- 1) Furnishing and installing Flexible Base Course as specified by the Drawings
- 2) Loading
- 3) Unloading
- 4) Hauling
- 5) Storing
- 6) Disposal of excess materials

2. Rework

a. Payment

- 1) Material used and work performed for reworking will not be paid for directly but will be subsidiary to original item bid.

1.3 REFERENCES**A. Definitions**

1. RAP – Recycled Asphalt Pavement.

B. Reference Standards

1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.
2. ASTM International (ASTM):
 - a. D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft³ (600 kN-m/m³))
 - b. D6938, Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
3. Texas Department of Transportation (TxDOT) Test Procedures:
 - a. Tex-104-E, Determining Liquid Limits of Soils
 - b. Tex-106-E, Calculating the Plasticity Index of Soils
 - c. Tex-107-E, Determining the Bar Linear Shrinkage of Soils
 - d. Tex-110-E, Particle Size Analysis of Soils
 - e. Tex-116-E, Ball Mill Method for Determining the Disintegration of Flexible Base Material
 - f. Tex-117-E, Triaxial Compression for Disturbed Soils and Base Materials
 - g. Tex-140-E, Measuring Thickness of Pavement Layer
 - h. Tex-411-A, Soundness of Aggregate Using Sodium Sulfate or Magnesium Sulfate
 - i. Tex-413-A, Determining Deleterious Material in Mineral Aggregate

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]**1.5 SUBMITTALS**

- A. Submittals shall be in accordance with Section 01 33 00.
- B. All submittals shall be approved by the City prior to delivery of materials.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS**A. Informational Submittals**

1. Proposed source and supplier of flexible base material.
2. Equipment Information
 - a. Submittal for all major equipment to include:
 - 1) Equipment name and description
 - 2) Size
 - 3) Intended use

1.7 CLOSEOUT SUBMITTALS**A. Test and Evaluation Reports**

1. All test reports generated during testing.

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**1.9 QUALITY ASSURANCE [NOT USED]****1.10 DELIVERY, STORAGE, AND HANDLING****A. Delivery and Acceptance Requirements**

1. Deposit material directly on subgrade and spread and shape same day.

B. Storage and Handling Requirements

1. Secure and maintain a location to store the material in accordance with Section 01 66 00.

2. Stockpiling

- a. When required, stockpile base material at a location approved by City.
- b. Create stockpiles in layers no greater than 2 feet thick.
- c. Stockpile must have a total height between 6 feet and 12 feet.
- d. Do not load material from stockpile until City has approved stockpile construction.
- e. Load by making successive vertical cuts through the entire depth of the stockpile.

1.11 FIELD CONDITIONS [NOT USED]**1.12 WARRANTY [NOT USED]****PART 2 - PRODUCTS****2.1 CITY-FURNISHED PRODUCTS****A. Existing Products**

1. Recycled Concrete

- a. Recycled concrete may only be used in Type D Flexible Base when obtained from the City.
 - 1) Coordinate with City regarding quantity available for use in the Work.
 - a) Contractor will not be entitled to additional payment or to submit a Contract Claim if recycled concrete is not available for their use.
- b. City-furnished recycled concrete is not subject to the requirements of Table 1.
- c. The final blended product will be subject to the requirements of Table 1.

2.2 MATERIALS**A. General**

1. Furnish uncontaminated materials of uniform quality in accordance with this Section and as specified in the Drawings.
2. Notify City of changes to material sources.
3. The City may sample and test project materials at any time before compaction throughout the duration of the project to assure materials accordance with this Section.

B. Aggregates

1. Furnish aggregate of the type and grade specified in the Drawings and in accordance with the requirements of Table 1.
2. If blending of sources is approved by the City, ensure each source is in accordance with the requirements of Table 1.
3. Do not use additives, such as but not limited to lime, cement, or fly ash to modify aggregates to meet the requirements of Table 1 unless approved by the City.
 - a. Additives may be used during final placing as directed by the geotechnical report.

Table 1
Material Requirements

Property	Test Method	Grade 1	Grade 2
Master gradation sieve size (% retained)	Tex-110-E		
2-1/2 in.		—	0
1-3/4 in.		0	0–10
7/8 in.		10–35	—
3/8 in.		30–50	—
No. 4		45–65	45–75
No. 40		70–85	60–85
Liquid limit, % max. ¹	Tex-104-E	35	40
Plasticity index, max. ¹	Tex-106-E	10	12
Wet ball mill, % max. ²	Tex-116-E	40	45
Wet ball mill, % max. increase passing the No. 40 sieve		20	20
Classification ³	Tex-117-E	1.0	1.1–2.3
Min. compressive strength ³ , psi			
lateral pressure 0 psi		45	35
lateral pressure 15 psi		175	175

1. Determine plastic index in accordance with Tex 107-E (linear shrinkage) when liquid limit is unattainable as defined in Tex 104-E.
2. When a soundness value is required by the Drawings, test material in accordance with Tex 411-A.
3. Meet both the classification and the minimum compressive strength, unless otherwise shown on the Drawings.

C. Flexible Base Types

1. Type A
 - a. Flexible Base Course consisting of limestone aggregate obtained from single, naturally occurring source in accordance with Section 32 05 16.
 - b. Do not use gravel or recycled materials in Type A Flexible Base Course.
2. Type B
 - a. Flexible Base Course consisting of limestone aggregate obtained from two or more naturally occurring sources in accordance with Section 32 05 16.
 - b. Do not use gravel or recycled materials in Type B Flexible Base Course.
3. Type D
 - a. Flexible Base Course consisting of Type A material in addition to up to 30% recycled material.

1 b. Ensure final blended material is in accordance with the requirements of Table 1.

2 **D. Recycled Materials**

3 **1. General**

- 4 a. Obtain City approval prior to using any recycled materials.
5 b. Furnish recycled materials free from reinforcing steel and other objectional
6 material.
7 c. Furnish recycled materials with at most 1.5 percent deleterious material when
8 tested in accordance with TEX-413-A.

9 **2. Recycled Asphalt Pavement (RAP)**

- 10 a. Up to 30% of Flexible Base Course material may be RAP when approved by
11 the City.
12 b. Crush RAP such that 100% passes the 2 inch sieve.

13 **E. Water**

- 14 1. Furnish water free of industrial wastes and other objectionable material.

15 **2.3 ACCESSORIES [NOT USED]**

16 **2.4 SOURCE QUALITY CONTROL [NOT USED]**

17 **PART 3 - EXECUTION**

18 **3.1 INSTALLERS [NOT USED]**

19 **3.2 EXAMINATION [NOT USED]**

20 **3.3 PREPARATION**

21 **A. Surface Preparation**

- 22 1. Shape subgrade or existing base to the lines and elevations indicated in the
23 construction plans according to the typical sections specified in the Drawings or as
24 directed by City.
25 2. Proof roll subgrade material and correct soft spots as directed.
26 3. Remove unsuitable soil or material and replace with acceptable soil.
27 4. When material is imported from a borrow source, manipulate and thoroughly mix
28 new base with existing material to provide uniform mixture before shaping.

29 **B. Demolition / Removal**

- 30 1. Remove existing pavement in accordance with Section 02 41 15 as specified in the
31 Drawings.

32 **3.4 INSTALLATION**

33 **A. General**

- 34 1. Construct each layer uniformly, free of loose or segregated areas, and with the
35 required density and moisture content.
36 2. Maximum layer depth of flexible base course in single layer not to exceed 6 inches.
37 3. Minimum layer depth of flexible base course is 2 inches.

4. Where subbase or base course exceeds 6 inches in thickness, construct in 2 or more courses of equal thickness not exceeding 4 inches.
5. Provide a smooth surface in accordance with the typical sections, lines, and grades specified in the Drawings or as directed by City.

B. Equipment

1. Provide machinery, tools, and equipment necessary for proper execution of the work.
2. Compaction
 - a. A roller is required for all compaction operations. The roller must have adequate weight and dimensions to achieve the required compaction. A roller shall be deemed acceptable if it can consistently achieve the desired results for flexible base placement.
 - b. Sheepfoot rollers are not allowed.
 - c. Alternate Equipment
 - 1) Contractor may use alternative compaction equipment that produces equivalent results if approved by City prior to use. Discontinue use of the alternate equipment and furnish the specified equipment if the desired results are not achieved.
 - 2) City may require Contractor to substitute equipment if production rate and quality requirements of the Contract Documents are not met.

C. Placement

1. Spread and shape flexible base into a uniform layer by approved means the same day as delivered unless otherwise approved by City.
2. Move all material from the location in which it is deposited no more than once.
3. Place material such that it is mixed to minimize segregation.
4. Construct layers to the thickness specified in the Drawings while maintaining the shape of the course.
5. Control dust by sprinkling.
6. Correct or replace segregated areas as directed.
7. Place successive base courses and finish courses using the same construction methods required for the first course.
8. When required to use multiple lifts, ensure successive base courses and finish courses are placed such that section breaks do not align.

D. Compaction

1. Compact using density control unless otherwise specified in the Contract Documents.
2. Bring each layer to the moisture content directed. When necessary, sprinkle the material to the extent necessary to provide not less than the required density as specified in this Section.
3. Compact the full depth of the subbase or base to the extent necessary to remain firm and stable under construction equipment.
4. Density Control

- 1 a. Compact until the entire depth of the mixture has achieved a uniform density
- 2 not less than 98 percent of the maximum density as determined by ASTM
- 3 D698.
- 4 b. Final moisture content shall be plus or minus 2 percent of optimum.

5 E. Finishing

- 6 1. After completing compaction, clip, skin, or tight-blade surface with a maintainer or
- 7 subgrade trimmer to a depth of approximately 1/4 inch.
- 8 2. Remove loosened material and dispose of it at an approved location.
- 9 3. Seal the clipped surface immediately by rolling with an appropriate size pneumatic
- 10 tire roller until a smooth surface is attained.
- 11 4. Add small increments of water as needed during rolling.
- 12 5. Shape and maintain the course and surface in accordance with the typical sections,
- 13 lines, and grades as specified in the Drawings or as directed by the City.
- 14 6. In areas where surfacing is to be placed, correct grade deviations greater than 1/4
- 15 inch in 16 feet measured longitudinally or greater than 1/4 inch over the entire
- 16 width of the cross-section.

17 3.5 REPAIR [NOT USED]

18 3.6 RE-INSTALLATION

19 A. Reworking a Flexible Base Section

- 20 1. Rework any constructed course which fails to meet the requirements of this Section.
- 21 2. Reworking includes loosening, adding material or removing unacceptable material
- 22 if necessary, mixing as directed, compacting, and finishing.

23 3.7 FIELD QUALITY CONTROL

24 A. Field Test and Inspections

- 25 1. Test in accordance with Section 01 45 23.
- 26 2. Density Test
- 27 a. City must be on site during density testing
- 28 b. Measure density of flexible base course in accordance with ASTM D6938.
- 29 c. Measure density every 100' along corridor or as directed by City.
- 30 d. City to determine density testing locations.
- 31 3. Depth Test
- 32 a. City must be on site during density testing
- 33 b. Measure depth of flexible base course in accordance with Tex-140-E in hand
- 34 excavated holes.
- 35 c. Measure depth every 300' along corridor or as directed by City.

10 **END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
6/14/2024		Eliminated 0.2 ft tolerance on subgrade elevations; 3.3.A.1
6/14/2024		Removed sheepsfoot roller for compaction; 3.4.B.2

SECTION 32 13 13 CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Material requirements and construction methods for:
 - a. Concrete pavement classes
 - b. Concrete pavement
 - c. Concrete street header

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.
3. Section 03 00 00 – Concrete and Concrete Reinforcing.
4. Section 32 01 29 – Concrete Paving Repair.
5. Section 32 05 16 – Aggregates for Exterior Improvements.
6. Section 32 13 73 – Concrete Paving Joint Sealants.
7. Section 41 14 00 – Batching Equipment.

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Concrete Pavement
 - a. Measurement
 - 1) Measured per square yard from back of curb to back of curb or edge of concrete to edge of concrete for Concrete Pavement installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per square yard for Concrete Pavement installed for:
 - a) Various depths.
 - c. The price bid shall include:
 - 1) Furnishing and installing Concrete Pavement as specified by the Drawings
 - 2) Shaping and fine grading the placement area
 - 3) Water
 - 4) Loading
 - 5) Unloading
 - 6) Storing
 - 7) Hauling
 - 8) Handling of materials

- 1 9) Traffic control for all testing
- 2 10) Trial batches (as needed)
- 3 11) Materials and work needed for any corrective action
- 4 12) Concrete
- 5 13) Aggregate
- 6 14) Supplementary cementing materials
- 7 15) Concrete additives
- 8 16) Mixing
- 9 17) Placement of concrete
- 10 18) Finishing of concrete
- 11 19) Curing and curing compounds
- 12 20) Sawing
- 13 21) Joint sealant
- 14 22) Reinforcing steel and reinforcement chairs
- 15 23) Disposal of excess material
- 16 24) Clean-up
- 17 2. Concrete Pavement (HES)
- 18 a. Measurement
- 19 1) Measured per square yard from back of curb to back of curb or edge of
- 20 concrete to edge of concrete for Concrete Pavement (HES) installed.
- 21 b. Payment
- 22 1) The work performed and materials furnished in accordance with this item
- 23 and measured as provided under "Measurement" will be paid for at the unit
- 24 price bid per square yard for Concrete Pavement (HES) installed for:
- 25 a) Various depths.
- 26 c. The price bid shall include:
- 27 1) Furnishing and installing Concrete Pavement (HES) as specified by the
- 28 Drawings
- 29 2) Shaping and fine grading the placement area
- 30 3) Water
- 31 4) Loading
- 32 5) Unloading
- 33 6) Storing
- 34 7) Hauling
- 35 8) Handling of materials
- 36 9) Traffic control for all testing
- 37 10) Trial batches (as needed)
- 38 11) Materials and work needed for any corrective action
- 39 12) Concrete
- 40 13) Aggregate
- 41 14) Supplementary cementing materials
- 42 15) Concrete additives
- 43 16) Mixing
- 44 17) Placement of concrete
- 45 18) Finishing of concrete
- 46 19) Curing and curing compounds
- 47 20) Sawing
- 48 21) Joint sealant
- 49 22) Reinforcing steel and reinforcement chairs

- 23) Disposal of excess material
- 24) Clean-up
- 3. Concrete Street Header
 - a. Measurement
 - 1) Measured per linear foot of Concrete Street Header installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per linear foot for Concrete Street Header installed.
 - c. The price bid shall include:
 - 1) Furnishing and installing Concrete Street Header as specified by the Drawings
 - 2) Shaping and fine grading the placement area
 - 3) Water
 - 4) Loading
 - 5) Unloading
 - 6) Storing
 - 7) Hauling
 - 8) Handling of materials
 - 9) Traffic control for all testing
 - 10) Trial batches (as needed)
 - 11) Materials and work needed for any corrective action
 - 12) Concrete
 - 13) Aggregate
 - 14) Supplementary cementing materials
 - 15) Concrete additives
 - 16) Mixing
 - 17) Placement of concrete
 - 18) Finishing of concrete
 - 19) Curing and curing compounds
 - 20) Sawing
 - 21) Joint sealant
 - 22) Reinforcing steel and reinforcement chairs
 - 23) Disposal of excess material
 - 24) Clean-up

1.3 REFERENCES

A. Abbreviations and Acronyms

- 1. ACI – American Concrete Institute
- 2. AASHTO – American Association of State Highway and Transportation Officials
- 3. ASTM – American Society for Testing and Materials
- 4. HES – High Early Strength
- 5. TxDOT – Texas Department of Transportation
- 6. W/C – Water to cement ratio
- 7. SCM – Supplementary Cementing Materials
- 8. UFFA – Ultra-Fine Fly Ash

9. MFFA – Modified Class F Fly Ash

10. PSI – Pounds per Square Inch

11. KSI – Kilopound per Square Inch

B. Reference Standards

1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.

2. American Association of State Highway and Transportation Officials (AASHTO)

a. AASHTO T26, Standard Method of Test for Quality of Water to be Used in Concrete

3. American Society for Testing and Materials (ASTM):

a. C31, Standard Practice for Making and Curing Concrete Test Specimens in the Field

b. C39, Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens

c. C42, Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete

d. C1602, Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete

4. American Concrete Institute (ACI):

a. ACI 305.1-14, Standard Specification for Hot Weathering Concreting

b. ACI 306.1-90, Standard Specification for Cold Weathering Concreting

c. ACI 301-16, Specifications for Structural Concrete

d. ACI 318, Building Code Requirements for Structural Concrete

5. Texas Department of Transportation (TxDOT) Departmental Material Specifications (DMS)

a. DMS-4515, Multiple-Piece Tie Bars for Concrete Pavement

b. DMS-4600, Hydraulic Cement

c. DMS-4640, Chemical Admixtures for Concrete

d. DMS-4650, Hydraulic Cement Concrete Curing Materials and Evaporation Retardants

e. DMS-6100, Epoxies and Adhesives

f. DMS-6310, Joint Sealants and Fillers

6. TxDOT Test Procedures:

a. Tex-422-A, Measuring Temperature of Freshly Mixed Portland Cement

b. Tex-423-A, Determining Concrete Thickness by Direct Measurement

c. Tex-424-A, Obtaining and Testing Drilled Cores of Concrete

d. Tex-470-A, Optimized Aggregate Gradation for Hydraulic Cement Concrete Mix Designs

e. Tex-472-A, Uniformity of Concrete

f. Tex-612-J, Acid Insoluble Residue for Fine Aggregate

1.4 ADMINISTRATIVE REQUIREMENTS

A. Pre-Paving Meeting

1. Hold meeting 1 week prior to performing any tasks included under Concrete Paving.

2. Invite the City and appropriate representatives.
3. Prior to pre-paving meeting, prepare the following:
 - a. Paving Plan
 - 1) Paving widths
 - 2) Jointing plan:
 - a) Locations and labels for all joint types including longitudinal and transverse construction joint locations
 - 3) Confirm rebar sizes for pavement reinforcing.
 - 4) Confirm hand-pour location and equipment to be used for forming, pouring, compacting, and finishing concrete.
 - 5) Texturizing method (broom or tining) and direction (longitudinal or transverse)
 - 6) Consolidation methods at joints
 - b. Paving Process
 - 1) Process to balance production, delivery, paving, and compaction to achieve continuous placement operations and good ride quality.
 - c. All Action and Information Submittals to be reviewed and approved prior to Pre-Paving Meeting.
4. During the Pre-Paving Meeting, determine whether tining or a broom finish is preferred by the City unless otherwise specified in the Drawings.

B. Night Work and Noise

1. Comply with all City Noise Ordinance in accordance with the General Conditions.
2. Night work will require prior City approval in accordance with the General Conditions.

1.5 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00.
- B. All submittals shall be approved by the City prior to commencement of any Concrete Paving activities.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Shop Drawings:

1. Concrete Mix Design
 - a. In accordance with Section 03 00 00.
 - b. Statement from the concrete supplier verifying concrete has been tested and handled in accordance with ASTM C94.
2. Jointing Layout
 - a. Provide a jointing layout if one is not provided in the Drawings.
3. Product Data
 - a. Provide the following from each manufacturer supplying the following in accordance with Section 03 00 00:
 - 1) Curing compounds
 - 2) Evaporation retardant
 - 3) Joint fillers
 - 4) Chemical additives

5) Epoxy

B. Informational Submittals:

1. Source Locations

- a. Location of all material sources

2. Testing Laboratory

- a. Submit for review and approval the following information for each testing laboratory used on the project:

- 1) Testing Laboratory Name
- 2) Location
- 3) What tests will be performed at the lab if multiple labs are used.
- 4) ACI Certification – All labs and Contractor personnel performing concrete testing must be ACI certified.

3. Equipment Information

- a. Submittal for all major equipment to include:

- 1) Equipment name and description
- 2) Size
- 3) Intended use

1.7 CLOSEOUT SUBMITTALS

A. Test and Evaluation Reports

1. All test reports generated during testing.

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**1.9 QUALITY ASSURANCE [NOT USED]****1.10 DELIVERY, STORAGE, AND HANDLING**

- A. Secure and maintain a location to store the material in accordance with Section 01 66 00.

B. Storage and Stockpiling

1. Cement and Supplementary Cementitious Material

- a. In accordance with Section 03 00 00.

2. Steel Reinforcement

- a. Store reinforcement above ground surface on skids, platforms, or other support.
- b. Protect reinforcement from mechanical damage and surface deterioration caused by exposure to conditions that could cause rust.

3. Chemical Admixture, Epoxy, Curing Compound, and Other Materials

- a. Follow manufacturer's instructions regarding storage and application at temperatures of material.

4. Epoxy

- a. Package components in airtight containers and protect from light and moisture.
- b. Include detailed instructions for the application of the material and all safety information and warnings regarding contact with the components.
- c. Store epoxy and adhesive components at temperatures recommended by the manufacturer.

1

2 **1.11 FIELD CONDITIONS**3 **A. Weather Conditions**

- 4 1. Do not place concrete when the ambient temperature in the shade is below 40
- 5 degrees Fahrenheit and falling unless approved in writing by the City.
- 6 2. Concrete may be placed when the ambient temperature in the shade is above 35
- 7 degrees Fahrenheit and rising or above 40 degrees Fahrenheit.
- 8 3. Protect the pavement with an approved insulating material capable of protecting the
- 9 concrete for the specified curing period when temperatures warrant protection
- 10 against freezing.
- 11 4. Submit proposed measure to protect the concrete from anticipated freezing weather
- 12 for the first 72 hours after a concrete pour to the City for review.
- 13 5. Repair or replace all concrete damaged by freezing at no cost to the City.

14 **1.12 WARRANTY [NOT USED]**15 **PART 2 - PRODUCTS**16 **2.1. CITY-SUPPLIED PRODUCTS [NOT USED]**17 **2.2. MATERIALS**18 **A. Concrete Production Materials**

- 19 1. Produce Class P1, P2, or HES concrete for concrete paving in accordance with 03
- 20 00 00.
- 21 a. Temperature
- 22 1) Pour concrete that is between 40 degrees and 95 degrees Fahrenheit when
- 23 measured in accordance with Tex-422-A at the time of discharge.
- 24 2) Take immediate corrective action or cease concrete placement when the
- 25 concrete temperature exceeds 95 degrees Fahrenheit.
- 26 2. Provide Cementitious Material and Water in accordance with Section 03 00 00.
- 27 3. Aggregate
- 28 a. General
- 29 1) Recycled crushed concrete may be used as coarse or fine aggregate in Class
- 30 A, B, E, and P concrete.
- 31 2) A maximum of 20 percent of the fine aggregate may consist of recycled
- 32 crushed concrete.
- 33 b. Coarse Aggregates
- 34 1) Provide coarse aggregate in accordance with Tex-470-A and Section 03 00
- 35 00 for P1, P2, or HES concrete based on the concrete classes specified on
- 36 the Drawings.
- 37 c. Fine Aggregates
- 38 1) Fine aggregate will consist of clean, hard, durable fragments in accordance
- 39 with Section 32 05 16.

2) Use fine aggregate with an acid insoluble residue of at least 60 percent by weight when tested in accordance with Tex-612-J in all concrete subject to direct traffic.

3) Use the following equation to determine if aggregate combination meets the acid insoluble residue requirement when blending fine aggregate:

$$\frac{(A_1 \times P_1) + (A_2 \times P_2)}{100} \geq 60 \text{ percent}$$

Where:

A₁ = acid insoluble (percent) of fine aggregate 1

A₂ = acid insoluble (percent) of fine aggregate 2

P₁ = percent by weight of fine aggregate 1 of the fine aggregate blend

P₂ = percent by weight of the fine aggregate 2 of the fine aggregate blend

a) Instead of using the above equation, the following blending may be done.

(1) Blend fine aggregate with a micro-deval loss of less than 12 percent when tested in accordance with Tex-461-A with at least 40 percent of a fine aggregate that has an acid insoluble residue of at least 60 percent.

4) Provide fine aggregates in accordance with gradation shown in Table 1.

Table 1
Fine Aggregate Gradation Chart

Sieve Size	Percent Passing by Weight
3/8"	100
#4	95–100
#8	80–100
#16	50–85
#30	25–65
#50	10–35 ¹
#100	0–10
#200	0–3 ²

1. 6–35 when sand equivalent value is greater than 85 when tested in accordance with Tex-203-F.

2. 0–6 for manufactured sand.

4. Chemical Admixtures

a. General

1) Provide chemical admixtures in accordance with Section 03 00 00.

b. Water Reducing Admixture

1) Provide water-reducing admixtures in accordance with Section 03 00 00.

c. Air-Entraining Admixture

1) Provide air-entraining admixtures in accordance with Section 03 00 00.

B. Concrete Placement Materials

1. Reinforcing Steel

a. Provide in accordance with Section 03 00 00.

2. Tie Bars

a. General

- 1) Provide in accordance with Section 03 00 00.
- 2) Use tie bars in longitudinal contraction and longitudinal construction joints.
- 3) Use support baskets to support the tie bars during concrete placement. Do not use chairs or other support devices without prior approval from the City.
- 4) Refer to this Section for installation requirements.
- b. Multiple Piece Tie Bars
 - 1) Use multiple piece tie bars along all longitudinal construction joints unless otherwise approved by the City.
 - 2) Do not use multiple piece tie bars for contraction joints or any transverse joints.
 - 3) Provide multiple piece tie-bars conforming to DMS-4515.
- c. Single Piece Tie Bars
 - 1) Use single piece tie bars for contraction joints only.
 - 2) Single piece tie bars will only be accepted for longitudinal construction joints when the existing concrete is already hardened in widening projects or when performing maintenance work such as panel replacement or concrete repair.
3. Dowel Bars
 - a. General
 - 1) Provide dowel bars and dowel caps in accordance with Section 03 00 00.
 - 2) Use dowel bars in transverse contraction joints and expansion joints.
 - 3) Refer to this Section for installation requirements.
4. Reinforcement Supporting Devices
 - a. Provide in accordance with Section 03 00 00.
5. Epoxy
 - a. Provide in accordance with Section 03 00 00.
6. Evaporation Retardant
 - a. Provide in accordance with Section 03 00 00.
7. Curing
 - a. Provide in accordance with Section 03 00 00.
8. Joint Fillers (Expansion Joints)
 - a. Provide boards at the size, shape, and type specified in the Drawings. Use redwood if the type of board is not specified in the Drawings.
 - 1) Provide redwood timber boards for expansion joints in accordance with DMS-6310.
 - b. Provide wood boards free of deformities and are smooth, flat, straight throughout, and sufficiently rigid to allow for easy installation.
9. Joint Sealants
 - a. Provide joint sealants in accordance with Section 32 13 73.

2.3. ACCESSORIES [NOT USED]

2.4. SOURCE QUALITY CONTROL

A. Tests and Inspections

1. Material Source Testing and Submittals

- a. Resubmit Action Submittals affected if any material source locations or concrete supplier is changed.
- b. Cementitious Materials
 - 1) Provide manufacturer testing reports in accordance with this Section.
 - 2) Perform testing in accordance with DMS-4600
 - 3) Furnish in accordance with Section 03 00 00.
- c. Water
 - 1) Perform testing to verify the water is in accordance with the requirements of AASHTO T26.
 - 2) Mix water in accordance with ASTM C1602.
- d. Aggregate Quality Requirements
 - 1) Provide aggregates in accordance with all requirements in Section 32 05 16 and this Section.
- e. Chemical Admixtures
 - 1) Provide manufacturer testing reports in accordance with this Section.
 - 2) Perform testing in accordance with DMS-4640
- f. Epoxy, Evaporation Retardants, Curing Compounds, Joint Fillers, and Joint Sealants
 - 1) Provide manufacturer testing reports and product data in accordance with this Section.
 - 2) Perform testing in accordance with DMS-4650, DMS-6100, and DMS-6310.

PART 3 - EXECUTION

3.1. INSTALLERS [NOT USED]

3.2. EXAMINATION [NOT USED]

3.3. PREPARATION

A. Class P1, P2, and HES Preparation

1. Hauling

- a. Clean delivery equipment as necessary to prevent accumulation of old concrete before loading fresh concrete.
- b. Deliver concrete to the site in accordance with Section 41 14 00.
- c. Maintain concrete delivery and placement rates to prevent cold joints and in accordance with Section 03 00 00.
- d. Any concrete not placed within the time limits specified under Section 03 00 00 will be rejected.
- e. Adding Water or Chemical Admixtures
 - 1) Adding chemical admixtures is not permitted at the jobsite.
 - 2) Water may be added to the truck until the slump test is conducted. Once the slump test is conducted, the addition of water or admixtures is not permitted unless the slump is too low or otherwise permitted.
 - 3) When water or an admixture is added, turn the drum or blades at least 30 additional revolutions at mixing speed to ensure thorough and uniform mixing of the concrete.

- 4) When water is added, do not exceed the approved mix design water to cementitious material ratio.
 - 5) Do not add water or chemical admixtures after any concrete has been discharged.
 - f. Provide the delivery ticket for the concrete in accordance with Section 41 14 00.
2. Subgrade
 - a. Hot-Mix Asphalt Base
 - 1) Prepare surface by removing, sweeping, or other approved methods.
 - b. Lime, Cement or Flexible Base Subgrade:
 - 1) Correct all irregularities in the subgrade of more than 1/2 inch., as shown by straightedge or template.
 - 2) Verify subgrade meets all requirements for the applicable subgrade type.
 - 3) Spray prepared subgrade with water, if needed, in advance of placing the pavement to ensure it is in a firm and moist condition.
 - 4) Take density tests no more than 72-hours prior to placement of concrete.
 - c. If rain or other conditions may have adversely affected the condition of the subgrade or base, additional tests may be required as directed by the City.

3.4. INSTALLATION

A. Class P1, P2, and HES Equipment

1. General

- a. Furnish and maintain all equipment necessary for the construction of concrete pavement in good working condition.
- b. The equipment to include spreading devices (augers), internal vibration, tamping, and surface floating necessary to finish the freshly placed concrete shall provide a dense and homogeneous pavement.

2. Forming Equipment

a. Pavement Forms

- 1) Pavement forms shall only be used when hand-pouring concrete. Use a slip-form paver for all machine-poured concrete unless otherwise approved by the City.
- 2) Provide metal or wood side forms unless otherwise approved by the City.
- 3) Provide side forms of sufficient cross-section, strength, and rigidity to support paving equipment and resist the impact and vibration of the operation without visible springing, settling, or deflection.
- 4) Use forms that extend the full depth of concrete and shall be:
 - a) a minimum of 1.5 inches in thickness when wooden forms are used
 - b) of a gauge that provides equivalent rigidity and strength when metal forms are used.
- 5) Use forms that are clean, oiled, and free from detrimental kinks, bends, or warps that could affect ride quality or alignment.
- 6) Provide flexible or curved forms made of metal or wood for curves that have a radius of 250 feet or less.
- 7) Secure forms on a base or firm subgrade accurately graded and that provides stable support without deflection and movement.
- 8) Pin every form at a minimum in the middle and near each end. Tightly join and key form sections together to prevent displacement.

- 9) Forms to be reset using heavy stakes or other additional supports if subgrade becomes unstable.
- 10) Obtain approval of formwork from the City prior to placement of concrete.
- 11) Forms are to be placed to provide pavement at final grade as specified in the Drawings.
- 12) Check conformity of the grade, alignment, and stability of forms immediately before pouring concrete and make necessary corrections.
- 13) Use a straight edge or other approved method to test the top of forms to ensure ride quality requirements for the completed pavement will be met.
- 14) Submit a request to the City for any alternative pavement form equipment for review.

b. Curb Forms

- 1) Provide curb forms for separately placed curbs not slip-formed in accordance with the requirements of Section 31 16 00.

c. Settling

- 1) Stop paving operations if forms settle or deflect more than 1/8 inch under finishing operations.
- 2) Reset the forms and refinish concrete surface to correct grade.

3. Paving, Consolidating, and Finishing Equipment

- a. Do not add water to concrete after discharged from delivery equipment unless approved by the City.
- b. Misting/fogging only allowed during Finishing. Refer to this Section for additional information.
- c. Machine-Poured Concrete Pavement
 - 1) Use a slip-form paver with a stringline that uniformly distributes the concrete with minimal segregation and provides a smooth finish in accordance with the plan line and grade for machine-poured concrete.
 - 2) The Contractor is responsible for establishing the location and elevation of the stringline to ensure pavement will be at the correct final grade specified in the Drawings.
 - 3) Provide mechanically-operated finishing floats capable of producing a uniformly smooth pavement surface.
 - 4) Provide watering equipment capable of providing a fine, light, water fog mist.
 - 5) Provide a stake line for the stringline every 25 feet and at every horizontal and vertical geometry point as specified in the Drawings.
- d. Hand-Poured Concrete Pavement
 - 1) Receive approval of all equipment used for hand-pouring concrete during Pre-Paving Meeting.
 - 2) Refer to this Section for additional requirements.
- e. Consolidating
 - 1) Provide mechanically-operated vibratory equipment capable of adequately consolidating the concrete.
 - 2) Provide immersion vibrators on paving equipment at sufficiently close intervals to provide uniform vibration and consolidation of the concrete over the entire width and depth of the pavement and in accordance with the manufacturer's recommendations.
 - 3) Provide immersion vibrator units that operate at a frequency in air of at least 8,000 cycles per minute on the paving equipment.

- 4) Provide enough hand-operated immersion vibrators for timely and proper consolidation of the concrete along forms, at all joints, and in areas not covered by other vibratory equipment.
- 5) Surface vibrators may be used to supplement equipment-mounted immersion vibrators.
- 6) Provide tachometers to verify the proper operation of all vibrators.
- f. Finishing
 - 1) Floats
 - a) Use a float attached to the slip-form paver or as a separate machine where possible.
 - b) When using a hand float or trowel, take care to not distort the surface. The City may require any concrete that has a non-uniform surface due to the improper use of a float to be removed and replaced at no cost to the City.
 - 2) Straightedge
 - a) Use a 10 or 15 foot long square tube straightedge made of magnesium or steel.
 - b) The City may require any concrete that has a non-uniform surface due to the improper use of a straightedge to be removed and replaced at no cost to the City.
4. Texturing Equipment
 - a. A baker broom or tining are the approved methods for texturizing concrete.
 - b. Provide a baker broom of sufficient transverse length to span the full width of pavement being placed.
 - c. Request approval to use an evaporation retardant if there is concern the concrete surface will dry too quickly before texturing and curing can occur.
 - d. Tining Equipment
 - 1) Provide a self-propelled metal tine device equipped with steel tines to obtain grooves that are 1/12-inch-wide and a depth of 1/8 inch to 3/16 inch.
 - 2) Tine Spacing:
 - a) Transverse tining spaced at approximately 1-inch center-to-center.
 - 3) Manual methods may be used that produce an equivalent texture when it is impractical to use self-propelled equipment. However, manual methods should be minimized. Obtain approval before using manual tining methods.
5. Curing Equipment
 - a. Provide a self-propelled machine for applying membrane curing compound using mechanically-pressurized spraying equipment with atomizing nozzles where possible.
 - b. If manually applying a curing compound, use equipment with a nozzle capable of producing the desired coverage based on the requirements of this specification.
 - c. Provide equipment and controls that maintain the required uniform rate of application over the entire paving area.
 - d. When reinforcing is exposed, provide plastic covers to prevent the bars from being coated in curing compound. Remove any curing compound on exposed reinforcing with a steel brush or by sand blasting.
6. Sawing Equipment
 - a. Provide power-driven concrete saws to saw joints specified in the Drawings.

- 1 7. Grinding Equipment
- 2 a. Provide grinding equipment specifically designed to smooth and texture
- 3 concrete pavement using circular diamond blades when required.
- 4 b. Provide equipment with an automatic grade control capable of grinding at least
- 5 a 3-foot width longitudinally in each pass without damaging the concrete.
- 6 8. Coring Equipment
- 7 a. Provide coring equipment capable of extracting cores in accordance with Tex-
- 8 424-A.
- 9 9. Miscellaneous Equipment
- 10 a. Provide both a 5-foot and a 10-foot steel or magnesium long-handled, standard
- 11 straightedge.
- 12 b. Provide enough work bridges long enough to span the pavement for finishing
- 13 and inspection operations.
- 14 10. The City may reject equipment and stop operation if equipment does not meet
- 15 requirements.
- 16 B. Class P1, P2, and HES Concrete Placement
- 17 1. General
- 18 a. This section outlines the requirements for the placement of Class P1, P2, and
- 19 HES concrete. Refer to other specifications for the placement requirement of
- 20 other concrete items.
- 21 b. Contractor to notify the City at least two working days in advance of
- 22 installation of concrete pavement.
- 23 c. Take care when placing concrete to keep all foreign material out.
- 24 d. Remove any foreign material from concrete pavement without damaging the
- 25 concrete.
- 26 e. Concrete may be poured by hand in situations where a slip-form paver cannot
- 27 be used due to space restrictions.
- 28 f. Receive approval from the City prior to hand pouring concrete. Hand pouring
- 29 should be minimized.
- 30 g. Do not allow pavement edge to deviate from the established paving line by
- 31 more than 1/2 inches at any point.
- 32 h. Place the concrete as near as possible to its final location and minimize
- 33 segregation and re-handling.
- 34 i. Distribute concrete using shovels where hand spreading is necessary. Do not
- 35 use rakes or vibrators to distribute concrete.
- 36 2. Removing Forms
- 37 a. Cleaning
- 38 1) Clean forms thoroughly after each use.
- 39 b. Removal
- 40 1) Forms to remain in place until the concrete is set and the removal will not
- 41 cause damage to the concrete. Leave the forms in place for 12 hours after
- 42 concrete has been poured unless approved by the City.
- 43 2) If forms are removed before 72 hours after concrete placement, promptly
- 44 apply membrane curing compound to the edge of the concrete pavement.
- 45 3) Avoid damage to the edge of the pavement when removing forms.
- 46 4) Repair damage resulting from form removal and honeycombed areas with a
- 47 mortar mix within 24 hours after form removal unless otherwise approved.

5) Remove and replace any damaged concrete that was not repaired within 24 hours at no cost to the City.

3. Reinforcing Steel and Joint Assemblies

a. General

- 1) Place reinforcing steel, dowels, and tie bars in position specified in the Drawings.
- 2) Provide reinforcing in accordance with the requirements of this Section.
- 3) Secure reinforcing bars at alternate intersections with wire ties or locking support chairs.
- 4) Tie all splices with wire.
- 5) Install all bars in their required position as specified in the Drawings.

b. Splicing

- 1) Provide standard reinforcement splices by lapping and tying ends.
- 2) In accordance with ACI 318 for minimum lap of spliced bars where not specified in the Drawings.

c. Installing and Supporting Reinforcing Steel

- 1) Layout reinforcing steel in accordance with Drawings. Support reinforcing steel using approved chairs or baskets.
- 2) Do not allow construction personnel to walk on the reinforcement bars. Replace any chair that is broken prior to concrete placement.
- 3) Steel pins may also be used to hold the reinforcement in place.
- 4) If reinforcing steel is found to be at incorrect depth:
 - a) Prior to concrete being poured, Contractor to adjust steel to correct depth as specified in the Drawings.
 - b) If concrete has been poured, Contractor to remove and replace at no cost to the City.

4. Joints

a. General

- 1) Place joints shown on the Drawings. If jointing layout is not provided on the Drawings, submit a jointing layout for review and approval to the City.
- 2) Maintain a right angle with the surface of the pavement for all joints.
- 3) Maintain an angle of greater than 75 degrees between all joints if 90 degrees is not achievable unless otherwise shown on the Drawings.
- 4) If uncontrolled cracking occurs during sawing, the City may require the panel with the crack to be removed and replaced at no cost to the City.
- 5) Use dowel baskets to support dowels and tie bars in the location shown on the Drawings. Do not manually or mechanically insert tie bars or dowels into wet or hardened concrete unless otherwise approved by the City.
- 6) Secure the dowel baskets into the subgrade or hot-mix asphalt base so that the baskets do not tip or move during concrete placement. Set up rebar and support baskets at least 12 hours prior to concrete placement for inspection.
- 7) Use the appropriate bar based on the Drawings and the requirements under Materials.
- 8) Clean and seal all joints before opening the pavement to traffic.
- 9) Joint Dimensions and Spacing
 - a) Match width and depth of the joint shown on the Drawings.
 - b) Dimensions of the sealant reservoir to match manufacturer's recommendations.

c) Ensure the joint depth after curing is 1/8 inch to 1/4 inch below the pavement surface at the center of the joint. If joint depth exceeds 1/4 inch, The City may request corrective action to be taken that may include remove and replace at no cost to the City.

d) Maintain a maximum 15 foot longitudinal joint spacing.

e) Ensure longitudinal joints follow the proposed lane lines where possible.

b. Contraction Joints

1) Transverse Contraction Joints

a) Only used in plain-jointed concrete pavement.

b) Maintain joint spacing as shown on the Drawings.

c) Do not install transverse contraction joints in continuously reinforced concrete pavement.

d) Use dowel bars that are coated with a thin film of grease or other approved de-bonding material to prevent concrete from bonding to the bar. See Materials.

e) Use the appropriate bar size, length, and spacing shown on the Drawings.

f) Maintain a sawcut depth of 1/3 of the slab thickness.

2) Longitudinal Contraction Joints

a) Used in plain-jointed and continuously reinforced concrete.

b) Maintain joint spacing as specified in the Drawings.

c) Use single piece tie bars. See Materials.

d) Use the appropriate bar size, length, and spacing specified in the Drawings.

e) Maintain a sawcut depth of 1/3 of the slab thickness.

c. Construction Joints

1) General

a) Use reinforcing support chairs to hold reinforcing bars that extend through the bulkhead in place.

b) Splicing is not allowed within 10 feet of a transverse construction joint.

c) Use the appropriate bar size, length, and spacing specified in the Drawings.

2) Transverse Construction Joints

a) A transverse construction joint shall be formed at the close of each day's work or when the placing of concrete has been stopped for 30-minutes or longer.

b) Provide a bulkhead (header) of sufficient cross-sectional area to prevent deflection and accurately notched to allow longitudinal rebar to continue through the bulkhead.

c) Provide bulkheads cut true to the section of the finished pavement and cleaned.

d) Plain-Jointed Concrete

(1) Select the construction joint location to be either at planned transverse contraction joint or halfway between two planned transverse contraction joints.

e) Continuously Reinforced Concrete

(1) Additional steel may be required. See Drawings for additional information.

- (2) Ensure longitudinal steel is supported and protected to prevent damage, vibration, and impact.
- 3) Longitudinal Construction Joints
- a) Use multiple piece tie bars where possible. See Materials.
- b) Bent tie bars are not permitted.
- c) Drill and epoxy single piece tie bars only for widening or maintenance projects where new concrete is being poured adjacent to existing concrete.
- d) Inserting Tie Bars
- (1) When approved, insert tie bars per this Section.
- (2) Fresh Concrete Installation:
- (a) Mechanically insert the tie bars using the paving machine when possible.
- (b) If the tie bar is inserted manually, check the insertion depth and location to ensure proper placement and evaluate if there has been any surface drop down.
- (c) If any surface drop down has occurred, repair concrete to the City's satisfaction.
- (d) Take care to avoid moving the reinforcing mat or any other reinforcing in the concrete when inserting the tie bar.
- (3) Hardened Concrete Installation:
- (a) Mark tie bar location and drill holes into the hardened concrete at least 10-inches deep with a drill bit that is 1/8-inch greater in diameter than the tie bar diameter.
- (b) Clean the hole with a wire brush and compressed air to remove all the dust and moisture.
- (c) Follow the epoxy manufacturer's instruction to apply the epoxy. Fill the entire hole with Type 3, Class C epoxy before inserting the tie bars.
- (d) When installing tie bars into hardened concrete, perform a pullout test.
- (4) Pullout Test:
- (a) Perform pullout tests on tie bars designated by the City.
- (b) Install the tie bar in accordance with this Section and the Drawings.
- (c) Perform a pullout test in accordance with ASTM E488 within the epoxy manufacturer's recommended curing time.
- (d) Verify the tie bar meets a pullout strength of at least 3/4 of the yield strength of the tie bar.
- (5) Corrective Measures
- (a) Perform corrective measures to provide adequate pullout resistance if any of the tests do not meet the required minimum pullout strength.
- (b) Repair any damage caused by testing at no cost to the City.
- (c) Acceptable corrective measures include, but are not limited to, installation of additional or longer tie bars.
- d. Expansion Joints
- 1) Install expansion joints perpendicularly to the surface at the locations shown on the Drawings, or as approved by the City.

2) Use dowels for expansion joints with a thin film of grease or other approved de-bonding material with dowel caps on the lubricated end of each dowel bar.

3) Use the appropriate bar size, length, and spacing shown on the Drawings.

4) When the proposed pavement is adjacent to or around existing structures, install expansion joints along the entire length of an existing structure.

5) Joint Filler

a) Provide joint fillers that conform to the requirements under Materials and Source Quality Control.

b) Provide timber boards that are accurately notched to allow rebar to continue through the expansion joint as needed.

c) Extend joint filler past or slightly below the bottom of concrete slab.

d) Use timber boards that span the length of the pavement width. Take care to ensure the timber board does not break, crack, or shift during concrete placement.

e) If the timber boards cracks, breaks, or shifts, remove and replace the adjacent pavement panels and reconstruct the pavement with a compliant timber board at no cost to the City.

e. Curb Joints

1) Provide joints in the curb of the same type and location as the adjacent pavement.

2) Extend expansion joints through the curb.

3) Extend sawed joints through the curb.

4) Construct curb joints at all transverse pavement joints.

5) For non-monolithic curbs, drill and epoxy tie bars as specified in the Drawings.

f. Sawing Joints

1) Joints to be sawed into concrete as soon as can be accomplished without damage to the pavement within 24 hours of concrete pavement placement as shown on Drawings.

2) Saw joints to the depth and spacing shown on the Drawings.

3) Use a chalk line, stringline, saw template, or other approved method to provide a true joint alignment.

g. Joint Sealing

1) See Section 32 13 73.

5. Concrete Placement

a. General

1) Use a slip-form paving machine. Hand paving is only permitted in areas such as intersections or other areas where use of paving machine is not practical.

2) If hand-pouring does not produce the required consolidation and finishing results, take immediate action. The City may require corrective action that may include removal and replacement of concrete at no cost to the City.

a) Do not use rakes or vibrators to move concrete. Only use shovels or the augers on the spreader and paver to move the concrete.

3) Do not allow the pavement edge to deviate from the established paving line by more than 1/2 inch at any point.

a) Consistency

4) Provide concrete with following consistency qualities:

- a) Mortar clings to coarse aggregate
 - b) Aggregate does not segregate in concrete when transported to the place of deposit
 - c) Concrete should flatten out at the center of the pile with edges standing and not flowing when dropped directly from the discharge chute of the mixer.
 - d) Concrete and mortar shows no free water when removed from the mixer
 - e) Concrete to slide and not flow into place when transported in metal chutes at an angle of 30 degrees with the horizontal
 - f) Surface of the finished concrete to be free from a surface film or laitance
- b. Honeycombing
- 1) Prevent honeycombing by taking special care placing and spading the concrete against forms and joints.
 - 2) The City may reject concrete with excessive voids and honeycombing on the edge of the pavement. The City may request corrective action to be taken that may include removal and replacement at no cost to the City
6. Consolidation
- a. Consolidate all concrete by approved mechanical vibrators in accordance with the requirements of this Section.
 - b. Ensure the vibrators don't dislodge or disturb the reinforcement.
 - c. Use hand-operated vibrators to consolidate concrete along forms, at all joints, and in areas not accessible to the machine-mounted vibrators.
 - d. Do not operate machine-mounted vibrators while the paving equipment is stationary.
7. Curb
- a. Construct concrete curb in accordance with Section 32 16 13.
8. Spreading and Finishing
- a. General
 - 1) Finish concrete using approved finishing equipment per this specification.
 - 2) If excessive surface slurry or bleeding occurs:
 - a) Do not finish concrete
 - b) Contact concrete supplier and review on-site conditions to verify too much water is not being added to the concrete mix by the Contractor or at the plant.
 - c) A fine mist of water may be used during dry conditions when approved by the City and only when under City supervision.
 - 3) Use minimal amount of water to maintain a moist surface.
 - 4) Reduce misting if float or straightedge finishing operations result in an excess amount of surface slurry.
 - 5) Do not apply water from a nozzle or a garden-type hose.
 - 6) Do not finish the concrete if there is free standing water on the surface of the concrete. Wait until the water evaporates before finishing.
 - 7) Hand finishing permitted only in intersections and areas inaccessible to a finishing machine.
 - b. Quality Checks

- 1) Perform sufficient checks with a long-handled 10-foot or 15-foot straightedge on fresh concrete to ensure the final surface is within the tolerances specified in Ride Quality.
 - a) Verify there is not more than 1/16-inch variation between the straightedge and the surface of the pavement.
 - b) Rework and refinish any surface not within the tolerance limits.
- 2) Edging
 - a) Tool all edges of slabs and all joints with an edger of the radius specified in the Drawings.
 - b) All concrete work to be left smooth and true to lines.

9. Texturing

- a. Complete final texturing using approved texturing equipment in accordance with this Section.

10. Curing

a. Surface Moisture

- 1) Prevent surface drying of pavement before application of the curing compound by means that may include water fogging/misting, wind screens, and evaporation retardants. Obtain approval from the City before using any of these methods.
- 2) If an evaporation retardant is approved, reapply as needed to maintain the concrete surface in a moist condition until the curing compound is applied.
- 3) Do not use evaporation retardant as a finishing aid.
- 4) If there is pavement failure due to poor surface moisture, City may require corrective action that could include removal and replacement at no cost to the City.

- b. A curing day is defined as a 24-hour period when either the temperature taken in the shade away from artificial heat is above 50 degrees Fahrenheit for at least 19 hours or the surface temperature of the concrete is maintained above 40 degrees Fahrenheit for 24 hours.

- c. Curing begins when the concrete curing compound or system has been applied.
- d. Maintain and promptly repair damage to curing materials on exposed surfaces of concrete pavement continuously for at least 3 curing days.
- e. Ensure curing compound does not disintegrate, peel, or crack.
- f. The City may reject the curing compound based on visual and odor inspection.

g. Application

- 1) Apply the curing compound in accordance with DMS-4650.
- 2) Manage finishing and texturing operations to ensure placement of curing compound on a moist concrete surface relatively free of water.
- 3) Maintain curing compounds in a uniformly agitated condition free of settlement before and during application.
- 4) Do not thin or dilute the curing compound.
- 5) Apply two coats of the curing compound.
- 6) Apply to damp concrete as a fine mist through atomizing nozzles, at a rate of no more than 180 square feet per gallon, that covers entire surfaces thoroughly and completely with a uniform film.
- 7) Coat sides of concrete slab after side forms are removed and earth is banked against them.

h. Alternative Curing Methods

- 1) If an alternative curing method is preferred, submit a request to City with all product data needed at least 72 hours prior to a concrete pour.
 - 2) If the alternative method for curing does not produce desired results, cease concrete paving activities and implement another method of curing.
11. Protection of Pavement and Opening to Traffic
- a. Protection of Pavement
 - 1) Erect and maintain barricades and other standard and approved devices, excluding all vehicles and equipment from the newly placed pavement for the periods specified.
 - 2) Maintain an adequate supply of sheeting or other material to cover and protect fresh concrete surface from weather damage. Apply as needed to protect the pavement surface from weather.
 - b. Opening to Traffic
 - 1) All traffic to be excluded from new concrete pavement for a minimum of 14 days.
 - 2) Early Opening to Traffic
 - a) If traffic needs to be open earlier than 14 days post pavement activities, use HES concrete.
 - b) Perform concrete cylinder breaks at 24 hours. If the compressive strength is 3,200 psi or higher, pavement may be opened to traffic after 72 hours.
 - 3) Emergency Opening to Traffic
 - a) Open the pavement to traffic under emergency conditions when directed in writing by the City and the pavement is at least 72 hours old.
 - b) Remove all obstructing materials, place stable material against the pavement edges, and perform other work involved in providing for the safety of traffic as required for emergency opening.
 - c. Clean and fill all joints prior to opening pavement to traffic.
12. Pavement Leaveouts
- a. Provide pavement leaveouts as necessary for local traffic at locations specified in the Drawings or as directed by the City.
 - b. Provide a suitable crossover connection for traffic movements based on a location that is determined in the field by the City.

C. Batching Equipment

1. Batching equipment shall be in accordance with the requirements of Section 41 14 00.

3.5. REPAIR

- A. Repair concrete pavement in accordance with 32 01 29.
- B. Repair the following items to remain at no cost to the City if any damage is caused due to concrete paving activities:
 1. Adjacent concrete or asphalt pavement to remain
 2. Adjacent sidewalk to remain
 3. Adjacent curb or curb and gutter to remain
 4. Subgrade or base material

- 1 5. Utility pipe
- 2 6. Irrigation systems including but not limited to sprinkler heads, conduit, and pipe.
- 3 7. Landscape beds or planters
- 4 8. Sod
- 5 9. Decorative hardscape or landscape features
- 6 10. Retaining walls
- 7 **3.6. RE-INSTALLATION [NOT USED]**
- 8 **3.7. SITE QUALITY CONTROL**
- 9 A. Verification Testing
- 10 1. General:
- 11 a. At the request of the City, the Contractor is to perform additional testing to
- 12 verify compliance, or the City may perform verification testing utilizing a third-
- 13 party testing laboratory.
- 14 b. The City may request verification testing at any time if production is suspected
- 15 to be non-conforming.
- 16 c. Verification testing will be performed in accordance with ASTM C42.
- 17 d. Verification testing will be performed by the Contractor at no cost to the City.
- 18 2. Concrete Mix Design and Verification
- 19 a. Perform required tests specified under Section 03 00 00 and provide testing and
- 20 evaluation reports.
- 21 b. Any concrete installed using a non-conforming mix design will be subject to
- 22 removal and replacement at no cost to the City.
- 23 3. Concrete Production Acceptance
- 24 a. During production and placement of concrete, perform testing to verify the
- 25 concrete is in conformance with the requirements in Section 03 00 00 for the
- 26 admixtures, mix design, slump, and compressive strength.
- 27 b. Aggregate Moisture Testing
- 28 1) In accordance with Section 32 05 16.
- 29 4. Concrete Placement Acceptance
- 30 a. Perform required tests specified under Section 03 00 00 and provide testing and
- 31 evaluation reports.
- 32 b. If concrete is suspected of having foreign material, City may reject at anytime
- 33 and the concrete may be removed and replaced at no cost to the City.
- 34 c. Acceptance will be based on attaining the strength and the fresh concrete tests
- 35 in accordance with Section 03 00 00.
- 36 B. Class P1, P2, and HES Pavement Thickness Test
- 37 1. Sampling
- 38 a. Perform strength testing for all projects containing more than 60 cubic yards of
- 39 concrete.
- 40 b. Obtain pavement cores in accordance with Tex-424-A. Check the pavement
- 41 thickness in accordance with Tex-423-A.
- 42 c. Collect pavement cores every 500 feet at the center of each concrete paving
- 43 run. If lanes are paved separately, collect a pavement core at the center of each
- 44 set of paved lanes.

- d. For hand poured concrete collect pavement cores every 250 feet.
 - e. Fill core holes using an approved concrete mixture and method.
2. Acceptance
- a. The Contractor will not be paid over the contract unit price for any pavement that is thicker than what is specified in the Drawings.
 - b. For pavement thickness deficiencies greater than 0.2 inches but less than 0.5-inches less than the thickness designated on the Drawings:
 - 1) Obtain additional cores every 150 feet at locations designated by the City.
 - 2) Additional cores may be requested by the City if the pavement is suspected to be deficient.
 - 3) Obtain cores until the variation between the thickness designated on the Drawings is less than 0.2-inches.
 - 4) For deficit concrete limit:
 - a) Remove limits of deficient concrete and replace at no cost to the City, or
 - b) Concrete to remain and City will pay the Contractor 50 percent of the unit price of concrete specified in the bid documents.
 - c. For pavement thickness deficiencies greater than 0.5 inches less than the thickness designated on the Drawings:
 - 1) Remove and replace deficient concrete at no cost to the City.

C. Class P1, P2, and HES Concrete Ride Quality

1. General
 - a. Provide a pavement to have a finished grade smooth and true to the established line, grade, and cross-section.
 - b. Ride quality will be measured parallel (longitudinal) and perpendicular (transverse) to the centerline of the roadway for pavement surfaces.
2. Profile Measurements
 - a. Use a 10-foot straightedge to perform ride quality tests or a high-speed or lightweight inertial profiler certified at the Texas A&M Transportation Institute.
 - 1) If using an inertial profiler, provide equipment certification documentation, display a current decal on the equipment indicating the certification expiration date, and use a certified profiler operator from TxDOT's Material Producer List.
 - 2) Use an inertial profiler when requested by the City.
 - 3) Provide documentation of the profiles when requested by the City.
 - b. Perform tests daily throughout the duration of the project.
 - c. Perform tests on the finished surface of the completed project or at the completion of a major stage of construction as approved.
 - d. Perform testing during off-peak traffic flow. Operate the inertial profiler in a manner that does not disrupt traffic flow as directed.
 - e. When measuring the ride quality on a surface open to traffic, use a moving traffic control plan in accordance with Part 6 of the TMUTCD and the Drawings.
3. Acceptance Plan
 - a. General
 - 1) Evaluate longitudinal and transverse profiles to verify not more than 1/8-inch variation between any 2 contacts.

- 1 2) Perform corrective action on surface areas that have more than 1/8-inch
- 2 variation between any 2 contacts.
- 3 b. Localized Roughness
- 4 1) Determine areas of localized roughness using the individual profile from
- 5 each wheel path.
- 6 2) Use a 10-foot straightedge to locate areas that have more than 1/8-inch
- 7 variation between any 2 contacts on the straightedge.
- 8 3) The City may waive localized roughness requirements for deficiencies
- 9 resulting from manholes or other similar appurtenances near the wheel
- 10 paths.
- 11 c. Corrective Action
- 12 1) Use diamond grinding to correct variations in the pavement surface or
- 13 localized roughness.
- 14 2) Reprofile the corrected area and provide results indicating the corrective
- 15 action was successful.
- 16 3) After making corrections, reprofile the pavement section to verify
- 17 corrections have produced the required improvements.
- 18 4) If corrective action does not produce the required improvement, the City
- 19 may require:
- 20 a) Continued corrective action, or
- 21 b) Removal and replacement of area at no cost to the City. The City may
- 22 negotiate a reduced payment amount for the defective area to remain in
- 23 place.
- 24 D. Non-Conforming Work
- 25 1. General
- 26 a. The City may at any time reject a material if it is found to be non-conforming to
- 27 this specification.
- 28 b. The City may require the Contractor at any time to remove and replace installed
- 29 Concrete Pavement if any material it was made with is found to be non-
- 30 conforming. This would be at no cost to the City.
- 31 c. Any rejection of materials or source locations will be at no cost to the City.
- 32 2. Aggregates
- 33 a. Aggregates that fail to meet the requirements of Section 32 05 16 will be
- 34 rejected by the City.
- 35 3. Concrete Mix Design and Production Materials
- 36 a. The City may reject the mix design if it does not conform to the requirements
- 37 of this specification and section 03 00 00.
- 38 b. Any concrete installed using a non-conforming mix design will be subject to
- 39 removal and replacement at no cost to the City.
- 40 c. The City may perform verification testing on all materials to verify the
- 41 conformance of the mixture.

- 1 3.8. SYSTEM STARTUP [NOT USED]
- 2 3.9. ADJUSTING [NOT USED]
- 3 3.10. CLEANING [NOT USED]
- 4 3.11. CLOSEOUT ACTIVITIES [NOT USED]
- 5 3.12. PROTECTION [NOT USED]
- 6 3.13. MAINTENANCE [NOT USED]
- 7
- 8 3.14. ATTACHMENTS [NOT USED]

9 END OF SECTION

10

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
6/14/2024		Removed maximum temperature limit for placement of concrete; 1.11.A
6/14/2014		Removed longitudinal tining requirement; 3.4.A.4

11

SECTION 32 13 73
CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sealants for Concrete Joints.

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.

1.2 PRICE AND PAYMENT PROCEDURES

- A. Joint sealant materials, equipment, tools, and incidentals will not be measured or paid for directly. All items included with the testing and furnishing of joint sealants are subsidiary to other pertinent items.

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.
2. American Society for Testing and Materials (ASTM):
 - a. ASTM D5249 – Standard Specification for Backer Material for Use with Cold and Hot Applied Joint Sealants in Portland-Cement Concrete and Asphalt Joints.
3. TxDOT Standards:
 - a. DMS-6310 – Joint Sealants and Seals.

1.4 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00.

- B. All submittals shall be approved by the City prior to delivery.

1.5 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Product Data

1. Provide electronic product data from each manufacturer that is supplying concrete joint sealants to be used on the project.
2. Product data sheets will include:
 - a. Manufacturer name

- 1 b. Date
- 2 c. Material description
- 3 d. Point of delivery
- 4 e. Produce data and test results in accordance with this Section
- 5 f. Material Safety Data Sheets, if applicable, required for PCE and all additives
- 6 g. Manufacturer Recommended Storing Data, if applicable
- 7 h. Application Recommendations, if applicable
- 8 i. Liquid Antistripping Agent Specific Data:
- 9 1) Specific gravity of the agent at the manufacturer's recommended addition
- 10 temperature
- 11 2) Manufacturer's recommended dosage range
- 12 3) Manufacturer's Recommended Storage and Handling instructions

13 **1.6 CLOSEOUT SUBMITTALS [NOT USED]**

14 **1.7 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**

15 **1.8 QUALITY ASSURANCE [NOT USED]**

16 **1.9 DELIVERY, STORAGE, AND HANDLING**

17 A. Storage and Handling Requirements

- 18 1. Secure and maintain a location to store the material in accordance with Section 01
- 19 66 00.

- 20 B. Keep the material stored in a clean condition at all times to prevent contamination with
- 21 foreign matter.

- 22 C. Follow any manufacturer recommendations for delivery, storage, and handling.

23 **1.10 FIELD CONDITIONS**

24 A. Ambient Conditions

- 25 1. In accordance with manufacturer's recommendations.

26 **1.11 WARRANTY [NOT USED]**

27 **PART 2 - PRODUCTS**

28 **2.1 CITY-FURNISHED PRODUCTS [NOT USED]**

29 **2.2 MATERIALS**

30 A. Joint Sealant

- 31 1. Provide joint sealants in accordance with DMS-6310 types 4, 5, 7, or 8 unless
- 32 otherwise specified in the Drawings or as directed by the City.

33 B. Backer Rod

- 34 1. Provide heat resistant backer rods conforming to ASTM D5249. The preferred
- 35 product is CERA-ROD by W.R. Meadows or approved equal.

2. The Contractor may request to use an alternative backer rod product in writing. If requesting an alternative material, the alternative backer rod must comply with the following:
 - a. The backer rod must not react with or bond to the sealant and must meet the requirements of the sealant manufacturer.
 - b. Provide a backer rod with a diameter of at least 25 percent larger than the joint reservoir width.
 - c. Backer rod materials must include closed-cell resilient foam; sponge rubber stock of vinyl, butyl, or neoprene; and polyethylene or polyurethane. Backer rods must also be flexible, lightweight, non-staining, heat-resistant, chemical-resistant, ultraviolet-stable, non-absorbent, low density, and compressible foam.

2.3 ACCESSORIES [NOT USED]

2.4 SOURCE QUALITY CONTROL [NOT USED]

PART 3 - EXECUTION

3.1 EQUIPMENT

A. Condition of Equipment

1. Provide equipment in good repair and operating condition.
2. The condition is subject to the approval of the City.
3. If the equipment is found to be insufficient, the Contractor is responsible for replacing the non-conforming equipment with conforming equipment at no cost to the City.
4. Any sealant installed using non-conforming equipment is subject to removal and replacement at no cost to the City.

3.2 EXAMINATION [NOT USED]

3.3 PREPARATION

- A. Make a groove along the cracks to be sealed and rout the groove approximately 1/2-inch-deep and 5/8-inch-wide, unless otherwise specified in the Drawings or directed by the City.
- B. Remove all foreign material from the joint or groove reservoir.
- C. Clean the joint by sandblasting or other approved methods. If directed, saw joint sides to remove embedded foreign material in the concrete not removed by sandblasting.
- D. Do not place sealant in a wet or damp joint or groove. Use approved drying method if joints or grooves are sealed within 24 hours of rain.
- E. Apply primer when required by the sealant manufacturer. Blow out joint or groove with high pressure air or other approved methods before placing sealant.

3.4 INSTALLATION

- A. After the joint is prepped, install sealant material. See Table 1 for different types of joints and sealants to be used.

B. Install joint sealant per manufacturer's recommendations. If backer rods are required, install backer rods and sealant in accordance with the manufacturer's recommendations and this Section.

C. Backer Rods:

1. Install backer rod with a single-wheeled or three-wheeled roller, depending on application.
2. Avoid stretching or puncturing the material.
3. Hold the backer rod in compression.
4. Provide a backer rod with a diameter 1/8 inch larger than the width of the joint for joint widths up to 3/4 inch. For joints 3/4 inch and larger, add 1/4 inch to diameter rod selection.
5. After backer rods are installed, apply sealants as necessary.

D. Remove and replace sealant when placed flush with or above the pavement surface.

Table 1
Types of Joints Requirements

Joint Type	Requirement
Transverse Contraction Joints	Backer Rods and Sealant
Longitudinal Contraction Joint	Sealant
Longitudinal Construction Joints	Sealant
Expansion Joints	Backer Rods and Sealant

E. Disposal of Materials:

1. Dispose of any excess material produced from cleaning of cracks.

3.5 REPAIR [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD QUALITY CONTROL [NOT USED]

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

2 **END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

CITY OF DENTON
STANDARD CONSTRUCTION SPECIFICATION DOCUMENTS
Revised October 22, 2020
Effective July 1, 2024

CSP 8845
Recycling Center Facility Improvements

SECTION 33.14.11 POLYVINYL CHLORIDE (PVC) PRESSURE PIPE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Polyvinyl Chloride (PVC) Pressure Pipe 4-inch through 12-inch for potable water and reuse applications
2. Polyvinyl Chloride (PVC) Pressure Pipe 6-inch through 24-inch for pressurized gravity sanitary sewer applications.

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract
2. Division 1 - General Requirements
3. Section 33.01.10 – Cleaning and Acceptance Testing of Water and Sewer Force Mains
4. Section 33.01.30 – Closed Circuit Television (CCTV) Inspection
5. Section 33.01.31 – Sewer and Manhole Testing
6. Section 33.01.32 – Cleaning of Sewer Mains
7. Section 33.05.05 – Utility Trench Excavation, Embedment, and Backfill
8. Section 33.05.97 – Utility Markers/Locators
9. Section 33.14.10 – Ductile Iron Pipe and Fittings

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. PVC Water Pipe

a. Measurement

- 1) Measured horizontally along the ground surface from center line to center line of fitting, manhole, or appurtenance of PVC Pressure Pipe installed.

b. Payment

- 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per linear foot for "PVC Water Pipe" installed for:

- a) Various sizes.
- b) Various types of backfill.

c. The price bid shall include:

- 1) Furnishing and installing PVC Pressure Pipe as specified by the Drawings
- 2) Furnishing and installing Ductile Iron Fittings in accordance with Section 33.14.10
- 3) Pavement removal

- 1 4) Excavation
- 2 5) Hauling
- 3 6) Disposal of excess material
- 4 7) Furnishing, placement and compaction of embedment
- 5 8) Furnishing, placement and compaction of backfill
- 6 9) Trench Dams
- 7 10) Thrust restraint
- 8 11) Gaskets
- 9 12) Clean-up
- 10 13) Cleaning
- 11 14) Disinfection
- 12 15) Testing
- 13 2. PVC Gravity Sewer Pressure Pipe
- 14 a. Measurement
- 15 1) Measured horizontally along the ground surface from center line to center
- 16 line of fitting, manhole, or appurtenance of PVC Pressure Pipe installed.
- 17 b. The work performed and materials furnished in accordance with this item and
- 18 measured as provided under "Measurement" will be paid for at the unit price bid
- 19 per linear foot for "PVC Gravity Sewer Pressure Pipe" installed for:
- 20 1) Various sizes.
- 21 2) Various types of backfill.
- 22 c. The price bid shall include:
- 23 1) Furnishing and installing PVC Pressure Pipe as specified by the Drawings
- 24 2) Furnishing and installing couplings
- 25 3) Utility Markers/Locators
- 26 4) Pavement removal
- 27 5) Excavation
- 28 6) Hauling
- 29 7) Disposal of excess material
- 30 8) Furnishing, placement and compaction of embedment
- 31 9) Furnishing, placement and compaction of backfill
- 32 10) Trench Dams
- 33 11) Gaskets
- 34 12) Clean-up
- 35 13) Cleaning
- 36 14) Testing

37 1.3 REFERENCES

- 38 A. Abbreviations and Acronyms
- 39 1. PVC – Polyvinyl Chloride
- 40 B. Reference Standards
- 41 1. Reference standards cited in this Section refer to the current reference standard
- 42 published at the time of the latest revision date logged at the end of this Section
- 43 unless a date is specifically cited.
- 44 2. American Association of State Highway and Transportation Officials (AASHTO).
- 45 3. ASTM International (ASTM):

- 1 a. D1784, Standard Specification for Rigid Poly(Vinyl-Chloride)(PVC)
- 2 Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
- 3 b. D3139, Standard Specification for Joints for Plastic Pressure Pipes Using
- 4 Flexible Elastomeric Seals.
- 5 4. American Water Works Association(AWWA):
- 6 a. M23, PVC Pipe – Design and Installation.
- 7 5. American Water Works Association/American National Standards Institute
- 8 (AWWA/ANSI):
- 9 a. C600, Installation of Ductile-Iron Water Mains and their Appurtenances.
- 10 b. C605, Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipes and
- 11 Fittings for Water.
- 12 c. C900, Polyvinyl Chloride (PVC) Pressure Pipe, and Fabricated Fittings, 4 IN
- 13 through 60 IN, for Water Transmission and Distribution.
- 14 6. NSF International (NSF):
- 15 a. 61, Drinking Water System Components – Health Effects.
- 16 b. 372, Drinking Water System Components – Lead Content.
- 17 7. Underwriters Laboratories, Inc. (UL).
- 18 a. 1285, Standard for Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented
- 19 Polyvinyl Chloride (PVCO) for Underground Fire Service

20 1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

21 1.5 SUBMITTALS

- 22 A. Submittals shall be in accordance with Section 01 33 00.
- 23 B. All submittals shall be approved by the City prior to delivery.

24 1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

- 25 A. Product Data
- 26 1. For PVC Pressure Pipe that is used for water distribution or wastewater gravity
- 27 mains, including:
- 28 a. PVC Pressure Pipe
- 29 b. Manufacturer
- 30 c. Dimension Ratio
- 31 d. Joint Types
- 32 2. Restraint
- 33 a. Retainer glands
- 34 b. Thrust harnesses
- 35 c. Any other means of restraint
- 36 3. Gaskets
- 37 4. Couplings for gravity sewer applications only
- 38 B. Certificates
- 39 1. Furnish an affidavit certifying the PVC Pressure Pipe meets the provisions of this
- 40 Section, all inspections have been made, and all tests have been performed in
- 41 accordance with AWWA C900.

42 1.7 CLOSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]**1.9 QUALITY ASSURANCE****A. Qualifications****1. Manufacturers**

- a. Finished pipe shall be the product of 1 manufacturer for each size, unless otherwise approved by the City.
 - 1) Change orders, specials, and field changes may be provided by a different manufacturer upon City approval.
- b. Pipe manufacturing operations shall be performed under the control of the manufacturer.
- c. Furnish all pipe in accordance with AWWAC900.

1.10 DELIVERY, STORAGE, AND HANDLING**A. Delivery and Acceptance Requirements**

1. Pipe manufactured more than 2 years prior to installation date will not be accepted by the City.

B. Storage and Handling Requirements

1. Secure and maintain a location to store the material in accordance with Section 01 66 00.
2. Store and handle in accordance with the guidelines as stated in AWWAM23.
 - a. When long-term storage (more than 2-months) with exposure to direct sunlight is unavoidable, cover PVC pipe with an opaque material and provide adequate air circulation above and around the pipe as required to prevent excessive heat accumulation.

1.11 FIELD CONDITIONS [NOT USED]**1.12 WARRANTY [NOT USED]****PART 2 - PRODUCTS****2.1 CITY-FURNISHED PRODUCTS [NOT USED]****2.2 MATERIALS****A. Manufacturers****1. Manufacturer List (Potable Water Pipe)**

- a. Diamond Plastics
- b. JM Eagle
- c. Northern Pipe Products
- d. Westlake Pipe & Fittings
- e. Certa-Lok by CertainTeed
- f. Vinyltech

2. Manufacturer List (Gravity Sewer Pipe)

- a. Diamond Plastics

- b. JM Eagle
- c. Westlake Pipe and Fittings
- d. Vinyltech
3. Manufacturer List (Couplings)
 - a. Multifittings Sewer Brute repair coupling
 - b. HARCO C900 repair coupling
 - c. Smith-Blair 226 or 228 repair clamp
4. Substitution requests for manufacturers not indicated above shall be processed in accordance with Section 01 25 00.

B. Pipe

1. Manufactured in accordance with AWWA C900.
2. Pipe for potable water shall be in accordance with NSF 61 and 372.
3. Pipe shall be approved by the Underwriter's Laboratories, in accordance with UL 1285.
4. Pipe shall have a lay length of 20 feet except for special fittings or closure pieces necessary to comply with the Drawings.
5. The pipe material shall be PVC, meeting the requirements of ASTM D1784, with a cell classification of 12454.
6. Pipe shall be colored blue for potable water applications. Pipe shall be colored green for sanitary sewer applications. Pipe shall be colored purple for reuse water applications.
7. Outside diameters must be equal to those of cast iron and ductile iron pipes.
8. The following minimum Dimension Ratio's apply:

Application	Diameter (inch)	Min Pressure Class (psi)
Potable Water	4 through 12	DR 14
Pressure Rated Gravity Sewer Main	6 through 24	DR 25

9. Pipe Markings

- a. Meet the minimum requirements of AWWA C900. Minimum pipe markings shall be as follows and shall be applied at intervals of not more than 5 feet:
 - 1) Manufacturer's name or trademark and production run record or lot code
 - 2) Nominal pipe size in inches and outer diameter base
 - 3) Dimension Ratio
 - 4) Pressure class
 - 5) Hydrostatic integrity test pressure on all standard length hydrostatic-tested pipe
 - 6) AWWA C900
 - 7) Mark of certifying agency for pipe intended for potable-water service or if not intended for potable water "NOT FOR POTABLE USE"
 - 8) For deflectable joints, the maximum allowable axial joint deflection in degrees

C. Pressure and Deflection Design

1. Base pipe design on trench conditions and design pressure class specified in the Drawings. Pipe shall be designed in accordance with the methods indicated in AWWA M23 for trench construction, using the following parameters:
 - a. Unit Weight of Fill (w) = 130 pcf
 - b. Live Load = AASHTO HS 20
 - c. Trench Depth = 12 feet minimum or as indicated in Drawings
 - d. Maximum E' = 1,000 max
 - e. Deflection Lag Factor = 1.0
 - f. Working Pressure (P_w) = 150 psi
 - g. Surge Allowance (P_s) = 100 psi minimum
 - h. Test Pressure =
 - 1) No less than 1.25 times the stated working pressure (187 psi minimum) of the pipeline measured at the highest elevation along the test section.
 - 2) No less than 1.5 times the stated working pressure (225 psi minimum) at the lowest elevation of the test section.
 - i. Maximum Calculated Deflection = 3 percent
 - j. Restrained Joint Safety Factor (SF) = 1.5
 - k. Maximum Joint Deflection = 100 percent of the manufacturer's recommendations.
2. Verify trench depths after existing utilities are located.
 - a. Accommodate vertical alignment changes required because of existing utility or other conflicts by an appropriate change in pipe design depth.
 - b. In no case shall pipe be installed deeper than its design allows.
3. Provisions for Thrust
 - a. Mechanically restrain all bends, tees, plugs, or other fittings with retainer glands in accordance with Section 33 14 10.
 - b. Restrained joints, where required, shall be used for a sufficient distance from each side of the bend, tee, plug, valve, or other fitting to resist thrust which will be developed at the design pressure of the pipe. For the purpose of thrust the following shall apply:
 - 1) Calculate valves as dead ends.
 - 2) Design pressure shall be greater than both the pressure class of the pipe and the internal pressure (P_i).
 - 3) Restrain joints with the following:
 - a) External mechanical joint restraint system in accordance with Section 33 14 10; or
 - b) Certa-Lok by CertainTeed restrained joint system.
 - c. The Pipe Manufacturer shall verify the length of pipe with restrained joints to resist thrust in accordance with the Drawings and the following:
 - 1) Calculate the weight of the earth (W_e) as the weight of the projected soil prism above the pipe, for unsaturated soil conditions.
 - 2) Soil density = 110 pcf (maximum value to be used), for unsaturated soil conditions
 - 3) In locations where ground water is encountered, reduce the soil density to its buoyant weight for the backfill below the water table.
 - a) Reduce the coefficient of friction to 0.25.
4. Joints

- 1 a. Joints shall be gasket, bell and spigot, and push-on type in accordance with
- 2 ASTM D3139.
- 3 b. Since each pipe manufacturer has a different design for push-on joints, gaskets
- 4 shall be part of a complete pipe section and purchased as such.
- 5 c. Lubricant must be non-toxic and NSF approved for potable water applications.
- 6 5. Couplings
- 7 a. Approved couplings are only allowed for gravity sewer applications. Potable
- 8 water couplings are addressed under Section 33 14 10.
- 9 6. Detectable Markers
- 10 a. Provide detectable markers in accordance with Section 33 05 97.

11 **2.3 ACCESSORIES [NOT USED]**

12 **2.4 SOURCE QUALITY CONTROL [NOT USED]**

13 **PART 3 - EXECUTION**

14 **3.1 INSTALLERS [NOT USED]**

15 **3.2 EXAMINATION [NOT USED]**

16 **3.3 PREPARATION [NOT USED]**

17 **3.4 INSTALLATION**

18 **A. General**

- 19 1. Install pipe, fittings, specials, and appurtenances in accordance with this Section,
- 20 AWWA C600, AWWA C605, AWWA M23, and the pipe manufacturer's
- 21 recommendations.
- 22 2. Lay pipe to the lines and grades indicated in the Drawings.
- 23 3. Excavate and backfill trenches in accordance with Section 33 05 05.
- 24 4. At the close of each operating day:
- 25 a. Keep the pipe clean and free of debris, dirt, animals, and trash – during and after
- 26 the laying operation.
- 27 b. Effectively seal the open end of the pipe using a gasketed night cap.
- 28 5. Embed pipe in accordance with Section 33 05 05.
- 29 6. Installation of PVC pipe within casing is only permitted with restrained joints.

30 **B. Pipe Handling**

- 31 1. Haul and distribute pipe at the project site.
- 32 2. Handle piping with care to avoid damage.
- 33 a. Inspect each joint of pipe and reject or repair any damaged pipe prior to
- 34 lowering into the trench.
- 35 b. Use only nylon ropes, slings, or other lifting devices that will not damage the
- 36 surface of the pipe for handling the pipe.

37 **C. Pipe Jointing**

- 38 1. Mechanical Joints
- 39 a. Install mechanical joints in accordance with Section 33 14 10.

- 1 2. Push-on Joints
- 2 a. Install push-on joints as defined in AWWA C900.
- 3 b. Wipe gasket seat inside the bell clean of all extraneous matter.
- 4 c. Place the gasket in the bell in the position specified by the manufacturer.
- 5 d. Apply a thin film of non-toxic vegetable soap lubricant to the inside of the
- 6 gasket and the outside of the spigot prior to entering the spigot into the bell.
- 7 e. Assemble the pipe joint by sliding the lubricated spigot end into the gasketed
- 8 bell end to the reference mark on the spigot.
- 9 f. When using a field cut plain end piece of pipe, refinish the field cut to conform
- 10 to AWWA C605.
- 11 g. For gravity sewer applications only, an approved manufacturer's coupling shall
- 12 be utilized to join two plain-end pipes per the guidelines provided by the
- 13 coupling manufacturer.
- 14 3. Joint Deflection
- 15 a. Deflect the pipe only when necessary to avoid obstructions or to meet the lines
- 16 and grades shown in the Drawings.
- 17 b. Joint deflection shall not exceed 100 percent of the manufacturer's
- 18 recommendation.

19 D. Detectable Metallic Tape Installation

- 20 1. See Section 33 05 97.

21 **3.5 REPAIR [NOT USED]**

22 **3.6 RE-INSTALLATION [NOT USED]**

23 **3.7 FIELD QUALITY CONTROL**

24 A. Potable Water Mains

- 25 1. Hydrostatic testing of water mains:
- 26 a. Hydrostatically test the mains in accordance with Section 33 01 10.

27 B. Gravity Sewer Mains

- 28 1. Closed Circuit Television (CCTV) Inspection
- 29 a. Provide a Post-CCTV Inspection in accordance with Section 33 01 30.
- 30 2. Sewer Pipe Testing
- 31 a. Test pipe in accordance with Section 33 01 31.

32 **3.8 SYSTEM STARTUP [NOT USED]**

33 **3.9 ADJUSTING [NOT USED]**

34 **3.10 CLEANING**

35 A. Potable Water Mains

- 36 1. Cleaning, disinfection, and bacteriological testing of water mains:
- 37 a. Clean, flush, pig, disinfect, and bacteriological test the mains in accordance with
- 38 Section 33 01 10.

39 B. Gravity Sewer Mains

- 40 1. Cleaning of Sewer Mains
- 41 a. Clean the mains in accordance with Section 33 01 32.

1 **3.11 CLOSEOUT ACTIVITIES [NOT USED]**

2 **3.12 PROTECTION [NOT USED]**

3 **3.13 MAINTENANCE [NOT USED]**

4 **3.14 ATTACHMENTS [NOT USED]**

5 **END OF SECTION**

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

6

SECTION 34 41 50
ALUMINUM SIGNS AND SIGN POSTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Aluminum signs installed on mast arms, signal poles, or steel posts.

B. Deviations from this City of Denton Standard Specification:

1. None.

C. Related Specification Sections include but are not limited to:

1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 - General Requirements.

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Furnishing and Installing Mast Arm or Signal Pole Mounted Aluminum Signs

a. Measurement

- 1) Measured per each sign furnished and installed.

b. Payment

- 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Furnish/Install Alum Sign Mast Arm Mount" installed for:
 - a) Various types.

c. The price bid shall include:

- 1) Fabricating the aluminum sign
- 2) Treatment of sign panels required before application of background materials
- 3) Application of the background materials and messages to the sign panels
- 4) Furnishing and fabricating frames, wind beams, stiffeners, or required joint backing strips
- 5) Furnishing bolts, rivets, screws, fasteners, clamps, brackets, and sign support connections
- 6) Assembling and erecting the signs
- 7) Preparing and cleaning the signs

2. Installing Mast Arm or Signal/ Street Light Pole Mounted Aluminum Signs

a. Measurement

- 1) Measured per each sign installed.

b. Payment

- 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Install Alum Sign Mast Arm Mount" installed.

- c. The price bid shall include:
 - 1) Installing each aluminum Sign
 - 2) Furnishing and fabricating frames, wind beams, stiffeners, or required joint backing strips
 - 3) Furnishing bolts, rivets, screws, fasteners, clamps, brackets, and sign support connections
 - 4) Assembling and erecting the signs
 - 5) Preparing and cleaning the signs
3. Furnishing and Installing Ground Mounted Aluminum Sign and Post Assemblies
 - a. Measurement
 - 1) Measured per each sign and post assembly furnished and installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Furnish/Install Alum Sign Ground Mount" installed for:
 - a) Various types.
 - c. The price bid shall include:
 - 1) Fabrication of signs and posts
 - 2) Treatment of sign panels required before application of background materials
 - 3) Application of the background materials and messages to the sign panels
 - 4) Scheduling utility line locates
 - 5) Furnishing and fabricating frames, wind beams, stiffeners, or required joint backing strips
 - 6) Furnishing bolts, rivets, screws, fasteners, clamps, brackets, and sign support connections
 - 7) Assembling and erecting the signs
 - 8) Preparing and cleaning the signs
4. Installing Ground Mounted Aluminum Sign and Post Assemblies
 - a. Measurement
 - 1) Measured per each sign and post assembly installed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Install Alum Sign Ground Mount" installed.
 - a) Various types.
 - c. The price bid shall include:
 - 1) Scheduling utility line locates.
 - 2) Assembling and erecting the signs and posts.
 - 3) Preparing and cleaning the signs.
5. Furnishing and Installing Aluminum Signs Mounted on Existing Poles
 - a. Measurement
 - 1) Measured per each sign furnished and installed.
 - b. Payment

- 1) The work performed, and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Furnish/Install Alum Sign Ex. Pole Mount" installed.
- c. The price bid shall include:
 - 1) Furnishing and Installing the aluminum sign
 - 2) Furnishing and fabricating frames, wind beams, stiffeners, or required joint backing strips
 - 3) Furnishing bolts, rivets, screws, fasteners, clamps, brackets, and sign support connections
 - 4) Assembling and erecting the signs
 - 5) Preparing and cleaning the signs
6. Installing Aluminum Sign Mounted on Existing Poles
 - a. Measurement
 - 1) Measured per each sign installed.
 - b. Payment
 - 1) The work performed, and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each for "Install Alum Sign Ex. Pole Mount" installed.
 - c. The price bid shall include:
 - 1) Furnishing and fabricating frames, wind beams, stiffeners, or required joint backing strips.
 - 2) Furnishing bolts, rivets, screws, fasteners, clamps, brackets, and sign support connections.
 - 3) Assembling and erecting the signs.
 - 4) Preparing and cleaning the signs.
7. Removal of Signs
 - a. Measurement
 - 1) Measured per each sign panel removed or each sign panel and post removed.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid per each "Remove Sign" or "Remove Sign and Post" for:
 - a) Various types.
 - b) Various configurations.
 - c. The price bid shall include:
 - 1) Removal of sign panel
 - 2) Removal of sign post, if required
 - 3) Excavation, if required
 - 4) Hauling, if required
 - 5) Disposal of excess materials
 - 6) Furnishing, placement, and compaction of backfill, if required
 - 7) Returning materials to the City as specified in the Drawings
 - 8) Cleaning sign panel if sign is to be reinstalled
 - 9) Clean-up

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this Section refer to the current reference standard published at the time of the latest revision date logged at the end of this Section unless a date is specifically cited.
2. American Standard Testing Materials (ASTM):
 - a. A1011 / A1011M-18a, Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
 - b. B117-18, Standard Practice for Operating Salt Spray (Fog) Apparatus.
 - c. B209-14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - d. B209-02a, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - e. D4956-17, Standard Specification for Retroreflective Sheeting for Traffic Control.
3. American Association of State Highways and Transportation Officials (AASHTO):
 - a. M120-08, Standard Specification for Zinc.
4. Texas Manual on Uniform Traffic Control Devices (TMUTCD).
5. Texas Department of Transportation, Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (TxDOT):
 - a. Item 644, Small Roadside Sign Assemblies.
6. United States Military Standard (MIL):
 - a. C5541, Chemical Conversion Coatings on Aluminum and Aluminum Alloys.

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]**1.5 SUBMITTALS**

- A. Submittals shall be in accordance with Section 01 33 00.
- B. All submittals shall be approved by the City prior to delivery and/or fabrication for special signs.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS**A. Shop Drawings**

1. Submit sign shop drawings to City for review prior to fabrication.

1.7 CLOSEOUT SUBMITTALS [NOT USED]**1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]****1.9 QUALITY ASSURANCE [NOT USED]****1.10 DELIVERY, STORAGE, AND HANDLING****A. Delivery and Acceptance Requirements**

1. Properly protect signs and parts so that no damage or deterioration occurs during the time of shipment until installation.

B. Storage and Handling Requirements

1. Secure and maintain a location to store the material in accordance with Section 01 66 00.
2. Ship, handle, and store completed sign blanks and completed signs so that corners, edges, and faces are not damaged.
3. Replace unacceptable signs as directed by City.
4. Store all finished signs off the ground and in a vertical position until erected.
5. Store finished signs 60 inches x 60 inches or smaller in a weatherproof building.
 - a. Larger signs may be stored outside.

1.11 FIELD CONDITIONS [NOT USED]

1.12 WARRANTY [NOT USED]

PART 2 - PRODUCTS

2.1 CITY-FURNISHED PRODUCTS

A. Items eligible for purchase from the City include:

1. Aluminum Signs.

2.2 MATERIALS

A. Manufacturers

1. Sign Sheeting

- a. Acrylic Overlay Film
 - 1) 3M Scotchlite ElectroCut Film Series 1170
- b. Non-Reflective Vinyl Film
 - 1) 3M Scotchlite ElectroCut Film Series 7725
- c. High Intensity Prismatic Retroreflective Sheeting with Adhesive Backing
 - 1) 3M Series 3930
- d. Super-High Efficiency Full Cube Retroreflective Sheeting with Pressure Sensitive Adhesive
 - 1) 3M Series 4000

2. Substitution requests for manufacturers or models not indicated above shall be processed in accordance with Section 01 25 00.

B. Sign Blanks

1. New, unweathered, milled, rolled, and finished aluminum alloy meeting requirements for 5052H38 in accordance with ASTM B209-14.
2. Free of buckle, crevice, warp, dent, cockles, burrs, corrosion, dirt, grease, oil, white rust, fingerprints, and/or other irregularities.
3. Degreased and etched according to industry standards with an Alodine finish applied in accordance with MIL-C5541, Class 1A.
4. Uniform thickness throughout.

C. Sign Sheeting

1. Acrylic Overlay Film

- 1 a. Applied to Type I, Type II, Type IV, Type IX, and other retroreflective sheeting
- 2 for permanent signing.
- 3 b. Durable
- 4 c. Transparent
- 5 d. Acrylic
- 6 e. Electronic-cuttable
- 7 f. Coated with a transparent, pressure sensitive adhesive
- 8 g. Have a removable synthetic liner – paper liner is not acceptable
- 9 h. Fill colors may be yellow, green, blue, brown, red, and orange.
- 10 2. Non-Reflective Vinyl Film
- 11 a. Applied to Type IV, Type XI (DG3) retroreflective sheeting for permanent
- 12 signing.
- 13 b. Durable
- 14 c. 2 mil opaque cast vinyl
- 15 d. Coated with a transparent, pressure-sensitive adhesive
- 16 e. Have a removable synthetic liner – paper liner is not acceptable
- 17 f. Film colors may include yellow, green, blue, brown, red, and orange.
- 18 3. High Intensity Prismatic Retroreflective Sheeting with Adhesive Backing
- 19 a. Combine with other components for permanent signing.
- 20 b. Unmetallized microplastic lens retroreflective element material
- 21 c. Smooth outer surface with the property of the retroreflector over its entire
- 22 surface.
- 23 1) The adhesive backing shall be pressure-sensitive, require no heat, solvent,
- 24 or other preparation for the adhesion to smooth, clean surfaces.
- 25 d. Film colors may include white, yellow, green, red, blue, and brown.
- 26 4. Super-High Efficiency Full Cube Retroreflective Sheeting with Pressure Sensitive
- 27 Adhesive
- 28 a. Combine with other components for permanent signing.
- 29 b. Have the highest retroreflectivity characteristics at medium and short road
- 30 distances.
- 31 c. Microprismatic retroreflective element material
- 32 d. Smooth outer surface with the property of retroreflector over its entire surface.
- 33 1) The adhesive backing shall be pressure-sensitive, require no heat, solvent,
- 34 or other preparation for adhesion to smooth, clean surfaces.
- 35 e. Film colors may include white, yellow, green, red, blue, brown, fluorescent
- 36 yellow, fluorescent yellow green, and fluorescent orange.
- 37 D. Telescopic Steel Sign Posts and Anchors
- 38 1. Provide posts and anchors in accordance with ASTM A1011 / A1011M-18a.
- 39 a. Minimum 60,000 psi yield strength.
- 40 b. Manufactured from raw steel.
- 41 c. Formed and welded on the corner prior to receiving a triple coat protection of
- 42 inline hot-dipped, galvanized zinc in accordance with AASHTO M-120-08 (0.8
- 43 ounces per square foot).
- 44 d. Provide chromate conversion coating and a cross-linked polyurethane acrylic
- 45 exterior coating.
- 46 e. Install double coat of zinc based organic coating on interior of posts.
- 47 1) Test coating in accordance with ASTM B-117-18.

E. Hardware

1. Provide galvanized steel, stainless steel, or dichromate-sealed aluminum for bolts, nuts, washers, lock washers, screws, and other sign assembly hardware.
2. Use plastic or nylon washers to avoid tearing the reflective sheeting.

2.3 ACCESSORIES [NOT USED]**2.4 SOURCE QUALITY CONTROL [NOT USED]****PART 3 - EXECUTION****3.1 INSTALLERS [NOT USED]****3.2 EXAMINATION [NOT USED]****3.3 PREPARATION [NOT USED]****3.4 FABRICATION****A. Sign Blanks**

1. Provide sign blanks to the sizes and shapes specified in the Drawings, free of buckles, warps, burrs, dents, cockles, or other defects.
2. Do not splice individual extruded aluminum panels.
3. Complete the fabrication of sign blanks, including the cutting and drilling or punching of holes, before cleaning and degreasing.
4. After cleaning and degreasing, ensure the substrate does not come into contact with grease, oils, or other contaminants before the application of the reflective sheeting.

B. Sign Sheeting

1. Use reflective sheeting from the same manufacturer for the entire face of a sign.
2. Apply sheeting to sign blanks in accordance with the recommended procedures of the sheeting manufacturer.
3. Clean and prepare the outside surface of extruded aluminum flanges in the same manner as the sign panel face.
4. Minimize the number of splices in the sheeting.
5. Overlap the lap-splices by at least 1/4 inch.
6. Provide a 1-foot minimum dimension for any piece of sheeting.
7. Do not splice sheeting for signs fabricated with transparent screen inks or colored transparent films.

C. Sign messages

1. Fabricate sign messages to the sizes, types, and colors specified in the Drawings.
2. Use sign message material from the same manufacturer for the entire message of a sign.
3. Ensure the screened messages have clean, sharp edges and exhibit uniform color and reflectivity.
4. Prevent runs, sags, and voids.

D. Telescopic steel sign posts

1. Permissible variation in straightness is 1/16 inch in 3 feet.

2. Allowable tolerances are based on outside dimensions in accordance with the table below.
- a. Measurements for outside dimensions shall be made at least 2 inches from end of tube.

Nominal Outside Dimensions (inches)	Outside Tolerance at all Side Corners (inches)
1-1/2 x 1-1/2	±0.006
1-3/4 x 1-3/4	±0.008
2 x 2	±0.008
2-1/4 x 2-1/4	±0.010
2-1/2 x 2-1/2	±0.010

3. Permissible variation in wall thickness is plus 0.011 inches, minus 0.008 inches.
4. Measured in the center of the flat side tolerance is ± 0.01 inch applied to the specific size determined at the corner.
5. Allowable tolerance for squareness of sides and permissible twist are based on outside dimensions in accordance with the table below.

Nominal Outside Dimensions (inches)	Squareness Tolerance (inches)	Twist Permissible in 3 inches Lengths (inches)
1-1/2 x 1-1/2	±0.009	0.050
1-3/4 x 1-3/4	±0.010	0.062
2 x 2	±0.012	0.062
2-1/4 x 2-1/4	±0.014	0.062
2-1/2 x 2-1/2	±0.015	0.075

6. All top posts must be capable of fracturing at the point of connection with a single anchor when impacted. Posts must fracture in a manner to allow the piece inside of the anchor to be removed and a new top post be installed.
7. The shape of all posts and anchors shall be square and straight with smooth tubing welded in one corner with a tolerance that permits telescoping of the next larger or small size, in 1/4-inch increments.
8. All anchors shall be 12 gauge with holes that are fully perforated 7/16-inch diameter on 1-inch centers for at least the top 4 inches of the anchor while being truly aligned in the center of the section.

9. All top posts shall be 14 gauge with holes that are die embossed knockouts on 1-inch centers for the entire length of the post and truly aligned in the center of section.

3.5 REPAIR / RESTORATION [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD QUALITY CONTROL [NOT USED]

3.8 SYSTEM STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING

A. Wash completed signs with a biodegradable cleaning solution acceptable to the manufactures of the sheeting, colored transparent film, and screen ink to remove grease, oil, dirt, smears, streaks, finger marks, and other foreign material.

B. Wash again before final inspection after erection.

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]

END OF SECTION

Revision Log		
DATE	NAME	SUMMARY OF CHANGE

EXHIBIT B
DRAWINGS AND SPECIFICATIONS; ON FILE WITH THE PURCHASING AGENT

EXHIBIT C

**KEY PERSONNEL RESUME FORM**

Offerors may attach an organizational chart (maximum of 1 page) as supporting documentation. Please list the key team members that will be assigned to the Project. The Offeror should, at a minimum, provide personnel experience for the Project Manager, Superintendent, and the Foreman/Foremen. Past experience projects should demonstrate experience in the categories listed in 12.2.2.7 of Section 00 21 16 – Instructions to Offerors.

NAME: Garrett Glover**JOB TITLE:** Project manager

LICENSES AND CERTIFICATIONS: OSHA 30 , First Aid Certified

TOTAL YEARS OF EXPERIENCE: 10 + years

TOTAL YEARS WITH CURRENT FIRM: 2 years

RELEVANT EXPERIENCE WITHIN LAST 5YRS., INCLUDE PROJECT ROLES AND RESPONSIBILITIES.

IDENTIFY IF PROJECTS WERE COMPLETED WITH CURRENT OR PREVIOUS FIRM:

Managing all aspects of a project that is given to him.
Making sure that everything runs smoothly with the job
and that it is getting done in a timely manner. Some of
those jobs include:

- McCoy's Reload Phase II - \$3.67 million
- Huntsville - Governors Ranch - \$11.5 million
- San Marcos townhomes - \$507 thousand

LIST OTHER ACTIVE PROJECTS FOR THE DURATION OF THIS PROJECT AND INCLUDE PERCENTAGE
OF TIME ALLOCATED FOR EACH: Copart Rosenberg - 5%

NAME: Dayton Harrell

JOB TITLE: General Superintendent

LICENSES AND CERTIFICATIONS: OSHA 10

TOTAL YEARS OF EXPERIENCE: 5 years

TOTAL YEARS WITH CURRENT FIRM: 5 years

RELEVANT EXPERIENCE WITHIN LAST 5YRS., INCLUDE PROJECT ROLES AND RESPONSIBILITIES.

IDENTIFY IF PROJECTS WERE COMPLETED WITH CURRENT OR PREVIOUS FIRM: Overlooks

Many of our current projects and ensures that everything runs smoothly, while dealing with daily operations involving transportation of equipment and certain crews.

LIST OTHER ACTIVE PROJECTS FOR THE DURATION OF THIS PROJECT AND INCLUDE PERCENTAGE OF TIME ALLOCATED FOR EACH: PEC Liberty Hill WH expansion - 20%

NAME: Jason Reeves

JOB TITLE: Vice President

LICENSES AND CERTIFICATIONS: OSHA 30

TOTAL YEARS OF EXPERIENCE: 5 years

TOTAL YEARS WITH CURRENT FIRM: 4 years

RELEVANT EXPERIENCE WITHIN LAST 5YRS., INCLUDE PROJECT ROLES AND RESPONSIBILITIES.

IDENTIFY IF PROJECTS WERE COMPLETED WITH CURRENT OR PREVIOUS FIRM: Dealing

directly with the customer and fulfilling their needs for each project. Also, helping out the estimating team. Some projects include:

- Lampasas Business Park - \$2.7 million

- Brushy Mountain - \$4.6 million
- Blessing Ranch - \$750 Thousand

LIST OTHER ACTIVE PROJECTS FOR THE DURATION OF THIS PROJECT AND INCLUDE PERCENTAGE OF TIME ALLOCATED FOR EACH: N/A

NAME: Kenny warr

JOB TITLE: President / Owner

LICENSES AND CERTIFICATIONS: OSHA 10

TOTAL YEARS OF EXPERIENCE: 27 Years

TOTAL YEARS WITH CURRENT FIRM: 10 Years

RELEVANT EXPERIENCE WITHIN LAST 5YRS., INCLUDE PROJECT ROLES AND RESPONSIBILITIES.

IDENTIFY IF PROJECTS WERE COMPLETED WITH CURRENT OR PREVIOUS FIRM: Previously
the VP of operations and Co-founder of Sprint Energy.
Now is President and Owner of Gage & Code
Construction, and managing daily operations.

LIST OTHER ACTIVE PROJECTS FOR THE DURATION OF THIS PROJECT AND INCLUDE PERCENTAGE OF TIME ALLOCATED FOR EACH: N/A

<p>NAME: Zach Cason</p> <p>JOB TITLE: Project Manager</p>

LICENSES AND CERTIFICATIONS: OSHA 30

TOTAL YEARS OF EXPERIENCE: 16 years

TOTAL YEARS WITH CURRENT FIRM: 2 years

RELEVANT EXPERIENCE WITHIN LAST 5YRS., INCLUDE PROJECT ROLES AND RESPONSIBILITIES.

IDENTIFY IF PROJECTS WERE COMPLETED WITH CURRENT OR PREVIOUS FIRM: Managing

all aspects of a project that is given to him. Making
sure that everything runs smoothly with the job and
that it is getting done in a timely manner. His
previous employment was with Pro Dirt Services where
he was vice president of construction. He managed
the day to day operations of all estimating
personnel, site work crews, utility crews, and
Commercial Site work.

LIST OTHER ACTIVE PROJECTS FOR THE DURATION OF THIS PROJECT AND INCLUDE PERCENTAGE OF TIME ALLOCATED FOR EACH: City of Round Rock - south creek

channel - 20%

EXHIBIT D

Alternates

NONE

EXHIBIT E
ALLOWANCES

None



SECTION 00 42 44 - UNIT PRICE PROPOSAL FORM - CSP8845

City of Denton - Solid Waste

901-B Texas Street

Denton, TX 76209

From: GAGE AND CADE CONSTRUCTION,
LLC

1107 CR 264

BERTRAM, TX 78605

<Purchasing Agent>/Purchasing Dept.

PROJ.: Recycling Center Facility Improvements

RFP:

ENG

PMO:

OFFEROR'S APPLICATION - UNIT PRICE PROPOSAL

Item No.	Spec. Section No.	Description	UOM	BID QTY	Unit Price	Extended Price
1	01-70-00	Mobilization/ Demobilization	LS	1	\$ 29,250.00	\$ 29,250.00
2	01-50-00	Temporary Controls	LS	1	\$ 9,000.00	\$ 9,000.00
3	13-00-00	Building Canvas and Appurtenances	LS	1	\$ 74,400.00	\$ 74,400.00
4	23-90-00	Vents and Fans and Appurtenances	LS	1	\$ 43,000.00	\$ 43,000.00
5	26-05-00	Electrical and Communications	LS	1	\$ 87,000.00	\$ 87,000.00
6	31-24-00	Embankment	CY	300	\$ 20.80	\$ 6,240.00
7	31-23-16	Excavation	CY	700	\$ 22.25	\$ 15,575.00
8	32-11-23	Flexible base	SF	12,200	\$ 4.35	\$ 53,070.00
9	03-00-00	Concrete Paving	SF	12,200	\$ 14.15	\$ 172,630.00
10	32-31-00	Barrier Arms and Appurtenances	LS	1	\$ 34,000.00	\$ 34,000.00
11	34-41-50	Signs and Striping	LS	1	\$ 13,500.00	\$ 13,500.00
12	33-14-17	Waterline and Hydrant	LS	1	\$ 24,500.00	\$ 24,500.00
13	11-90-00	Portable Eyewash/ Shower	LS	1	\$ 23,300.00	\$ 23,300.00
14						\$ -
15						\$ -
16						\$ -
17						\$ -
18						\$ -
19						\$ -
20						\$ -
21						\$ -
22						\$ -
23						\$ -
24						\$ -
25						\$ -
26						\$ -
27						\$ -
28						\$ -
29						\$ -
30						\$ -
TOTAL BASE PROPOSAL:						\$585,465.00

Alternate Proposal

1A					\$ -	\$ -
2A					\$ -	\$ -
3A					\$ -	\$ -
TOTAL ALT. Proposal:						\$0.00

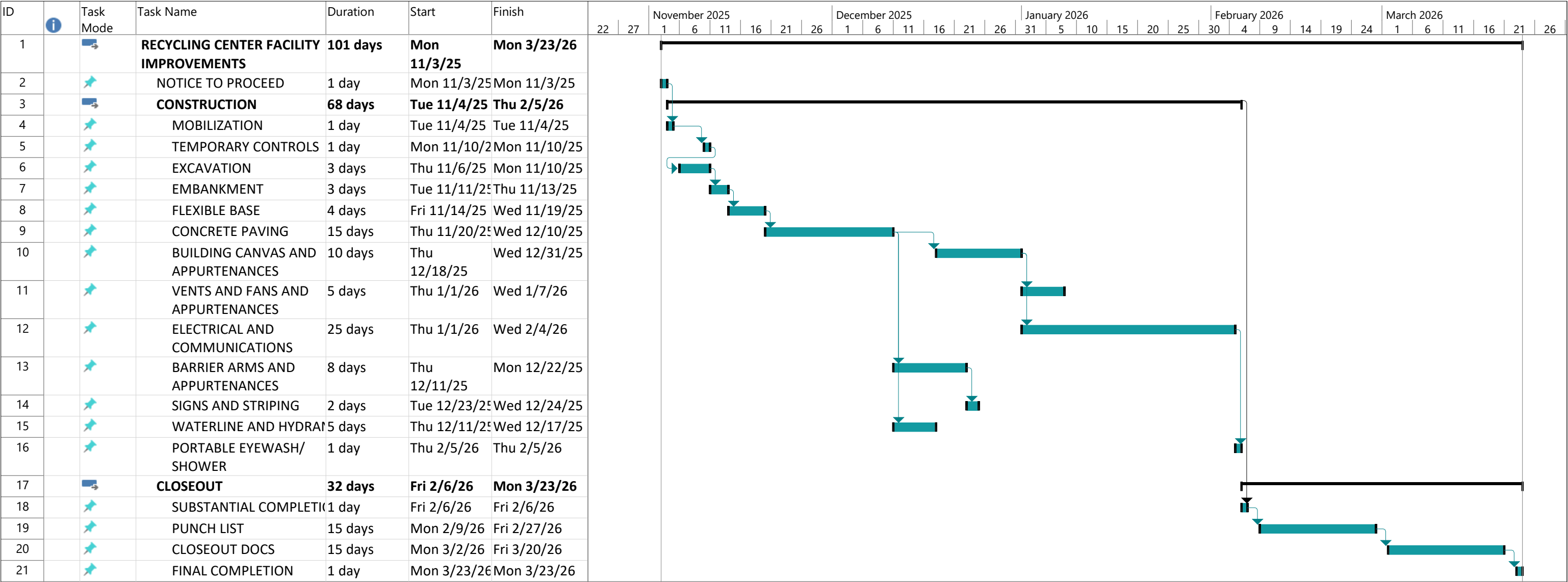
TOTAL BASE PLUS ALTERNATE PROPOSAL: \$585,465.00

Recycling Center Facility Improvements TOTAL PROPOSAL: \$585,465.00

EXHIBIT G
INITIAL SCHEDULE OF VALUES

NONE

EXHIBIT H



Project: SCHEDULE
Date: Tue 9/23/25

Task	<div></div>	Project Summary	<div></div>	Manual Task	<div></div>	Start-only	<div></div>	Deadline	<div></div>
Split	<div></div>	Inactive Task	<div></div>	Duration-only	<div></div>	Finish-only	<div></div>	Progress	<div></div>
Milestone	<div></div>	Inactive Milestone	<div></div>	Manual Summary Rollup	<div></div>	External Tasks	<div></div>	Manual Progress	<div></div>
Summary	<div></div>	Inactive Summary	<div></div>	Manual Summary	<div></div>	External Milestone	<div></div>		

EXHIBIT I

ESCROW AGREEMENT

NONE

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

FORM CIQ

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.

GAGE AND CADE CONSTRUCTION, LLC

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

12/19/23

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.

EXHIBIT K

SECTION 00 41 01
PROPOSAL FORM - CSP

TO: City of Denton
c/o: Purchasing Division
901-B Texas Street
Denton, Texas 76209

FOR: CSP 8845 – Recycling Center Facility Improvements

1 Enter into Agreement

The undersigned Offeror proposes and agrees, if this Proposal is accepted, to enter into an Agreement with City in the form included in the Proposal Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Unit Price Proposal and within the Contract Time indicated in this Proposal and in accordance with the other terms and conditions of the Contract Documents.

2 OFFEROR Acknowledgements and Certification

- 2.1 In submitting this Proposal, Offeror accepts all of the terms and conditions of the INVITATION TO OFFERORS and INSTRUCTIONS TO OFFERORS, including without limitation those dealing with the disposition of Offeror's Bond.
- 2.2 Offeror is aware of all costs to provide the required insurance, will do so pending contract award, and will provide a valid insurance certificate meeting all requirements within 14 days of notification of award.
- 2.3 Offeror certifies that this Proposal is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
- 2.4 Offeror has not directly or indirectly induced or solicited any other Offeror to submit a false or sham Proposal.
- 2.5 Offeror has not solicited or induced any individual or entity to refrain from proposing.
- 2.6 Offeror has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Agreement. For the purposes of this Paragraph:
- a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the proposal process.
 - b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the proposal process to the detriment of City (b) to establish proposal prices at artificial non-competitive levels, or (c) to deprive City of the benefits of free and open competition.
 - c. "collusive practice" means a scheme or arrangement between two or more Offerors, with or without the knowledge of City, a purpose of which is to establish proposal prices at artificial, non-competitive levels.
 - d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the proposal process or affect the execution of the Contract.

2.7 The Offeror acknowledges and agrees to comply with the requirements of City Ethics Ordinance No. 23-1165.

3 Time of Completion

3.1 The Work will be Substantially Complete as defined in the General Conditions within 270 Days after the date when the Contract Time commences to run, which is the day indicated in the Notice to Proceed, plus any extension thereof allowed in accordance with Article 8 of the General Conditions.

3.2 The Work will be complete for Final Acceptance within 300 Days after the date when the Contract Time commences to run, which is the day indicated in the Notice to Proceed, plus any extension thereof allowed in accordance with Article 8 of the General Conditions.

3.3 Offeror accepts the provisions of the Agreement as to Liquidated Damages in the event of failure to obtain Milestones (if applicable), Substantial Completion, and Final Acceptance within the times specified in the Agreement.

4 Attached to this Proposal

4.1 The following documents are attached to and made a part of this Proposal:

- a. Section 00 35 14 – Conflict of Interest Affidavit – CSP
- b. Section 00 41 01 – This Proposal Form – CSP
- c. Section 00 42 44 – Unit Price Proposal Form – CSP – Excel Electronic Copy (either included in the hard copy Proposal, or submitted via Ionwave)
- d. Section 00 43 14 – Required Offeror's Bond – CSP, issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions.
- e. Section 00 43 38 – Proposed Subcontractors Form – CSP
- f. Section 00 43 39 – Vendor Compliance to State Law Non-Resident Offeror – CSP
- g. Section 00 45 14 – Safety Record Questionnaire – CSP
- h. Section 00 45 27 – Contractor Compliance with Workers Compensation Law – CSP
- i. Section 00 45 44 – Corporate Resolution of Authorized Signatories – CSP
- j. Any additional documents required by Paragraph 12 of Section 00 21 16 – Instructions to Offerors

5 Total Proposal Amount

5.1 Offeror will complete the Work in accordance with the Contract Documents for the following proposal amount. In the space provided below, please enter the total proposed amount for this project. This figure will be read publicly by the City at the proposal opening.

5.2 It is understood and agreed by the Offeror in signing this proposal that the total proposed amount entered below is subject to verification and/or modification by multiplying the unit prices for each pay item by the respective estimated quantities shown in this proposal and then totaling all of the extended amounts.

Total Proposal Amount:

\$ 585,465.00

6 Proposal Submittal

6.1 It is understood by Offeror that submission of the total proposal amount is only one of the factors for the City's evaluation process, and that any award of contract will be based on the complete evaluation of the Proposal and Offeror by City under the terms provided in the Instructions to Offerors or any validly issued amendments or addenda.

6.2 This Proposal is submitted on September 24th, 2025 by the entity named below.

Respectfully submitted,

By: 
(Signature)

Preston Reeves
(Printed Name)

Title: Estimator

Company: Brace and Cade Construction

Address: 1107 CR 264
Bertram, TX 78605

State of Incorporation: Texas

Email: prston@braceandcadeconstruction.com

Phone: 512-734-5869

Receipt is acknowledged of the following Addenda:	Initial
Addenda No. 1:	
Addenda No. 2:	
Addenda No. 3:	
Addenda No. 4:	
Addenda No. 5:	

END OF SECTION

"General Decision Number: TX20250243 03/14/2025

Superseded General Decision Number: TX20240243

State: Texas

Construction Type: Building

County: Denton County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/03/2025
1	03/14/2025

ASBE0021-011 06/01/2023

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (Duct, Pipe and Mechanical System Insulation)....	\$ 31.32	7.52

* BOIL0074-003 01/01/2025

	Rates	Fringes
BOILERMAKER.....	\$ 33.17	24.92

CARP1421-002 10/01/2023

	Rates	Fringes
MILLWRIGHT.....	\$ 32.02	11.27

* ELEV0021-006 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 51.93	38.435+a+b

FOOTNOTES:

A. 6% under 5 years based on regular hourly rate for all hours worked. 8% over 5 years based on regular hourly rate for all hours worked.

B. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.

 ENGI0178-005 06/01/2020

	Rates	Fringes
POWER EQUIPMENT OPERATOR (1) Tower Crane.....	\$ 32.85	13.10
(2) Cranes with Pile Driving or Caisson Attachment and Hydraulic Crane 60 tons and above.....	\$ 28.75	10.60
(3) Hydraulic cranes 59 Tons and under.....	\$ 32.35	13.10

 IRON0263-005 06/01/2024

	Rates	Fringes
IRONWORKER (ORNAMENTAL AND STRUCTURAL).....	\$ 28.64	7.93

 PLUM0100-008 11/01/2024

	Rates	Fringes
HVAC MECHANIC (HVAC Unit Installation Only).....	\$ 39.76	14.04

* SUTX2014-019 07/21/2014

Rates	Fringes
BRICKLAYER.....\$ 19.89	0.00
CARPENTER, Excludes Drywall Hanging, Form Work, and Metal Stud Installation.....\$ 19.25	0.00
CAULKER.....\$ 16.63 **	0.00
CEMENT MASON/CONCRETE FINISHER...\$ 12.93 **	0.00
DRYWALL HANGER AND METAL STUD INSTALLER.....\$ 15.42 **	0.00
ELECTRICIAN (Alarm Installation Only).....\$ 18.83	3.32
ELECTRICIAN (Communication Technician Only).....\$ 19.98	3.64
ELECTRICIAN (Low Voltage Wiring Only).....\$ 15.80 **	2.18
ELECTRICIAN, Excludes Low Voltage Wiring and Installation of Alarms/Sound and Communication Systems.....\$ 18.82	0.83
FORM WORKER.....\$ 12.13 **	0.00
GLAZIER.....\$ 16.55 **	3.13
HIGHWAY/PARKING LOT STRIPING: Operator (Striping Machine).....\$ 10.04 **	2.31
INSTALLER - SIDING (METAL/ALUMINUM/VINYL).....\$ 14.74 **	0.00
INSTALLER - SIGN.....\$ 15.61 **	0.00
INSULATOR - BATT.....\$ 13.00 **	0.00
IRONWORKER, REINFORCING.....\$ 14.02 **	0.00
LABORER: Common or General.....\$ 11.76 **	0.00
LABORER: Mason Tender - Brick...\$ 10.54 **	0.00
LABORER: Mason Tender - Cement/Concrete.....\$ 10.75 **	0.00
LABORER: Pipelayer.....\$ 13.00 **	0.35
LABORER: Plaster Tender.....\$ 12.22 **	0.00
LABORER: Roof Tearoff.....\$ 11.28 **	0.00
LABORER: Landscape and Irrigation.....\$ 12.50 **	0.48
LATHER.....\$ 16.00 **	0.00
OPERATOR:	

Backhoe/Excavator/Trackhoe.....	\$ 12.83 **	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 13.93 **	0.00
OPERATOR: Bulldozer.....	\$ 18.29	1.31
OPERATOR: Drill.....	\$ 15.69 **	0.50
OPERATOR: Forklift.....	\$ 13.21 **	0.81
OPERATOR: Grader/Blade.....	\$ 12.48 **	0.00
OPERATOR: Loader.....	\$ 13.46 **	0.85
OPERATOR: Mechanic.....	\$ 17.52 **	3.33
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 18.44	0.00
OPERATOR: Roller.....	\$ 15.04 **	0.00
PAINTER (Brush, Roller and Spray), Excludes Drywall Finishing/Taping.....	\$ 13.21 **	2.33
PAINTER: Drywall Finishing/Taping Only.....	\$ 13.76 **	2.84
PIPEFITTER, Excludes HVAC Pipe Installation.....	\$ 22.98	6.35
PLASTERER.....	\$ 15.75 **	0.00
PLUMBER (HVAC Pipe Installation Only).....	\$ 22.16	5.46
PLUMBER, Excludes HVAC Pipe Installation.....	\$ 20.84	4.74
ROOFER.....	\$ 17.19 **	0.00
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 20.88	5.19
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 24.88	5.97
SPRINKLER FITTER (Fire Sprinklers).....	\$ 22.94	0.00
TILE FINISHER.....	\$ 11.22 **	0.00
TILE SETTER.....	\$ 14.25 **	0.00
TRUCK DRIVER: 1/Single Axle Truck.....	\$ 16.40 **	0.81
TRUCK DRIVER: Dump Truck.....	\$ 12.39 **	1.18
TRUCK DRIVER: Flatbed Truck.....	\$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	\$ 12.50 **	0.00

TRUCK DRIVER: Water Truck.....\$ 12.00 ** 4.11

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.75) or 13658 (\$13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the

example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE:

UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

=====
END OF GENERAL DECISION"

Certificate Of Completion

Envelope Id: F5CC3F18-8F76-43CC-A962-3C77E53D4E62

Subject: Please DocuSign: City Council Contract 8845 Recycling Center Facility Improvements

Source Envelope:

Document Pages: 312

Certificate Pages: 6

AutoNav: Enabled

Envelopeld Stamping: Enabled

Time Zone: (UTC-06:00) Central Time (US & Canada)

Status: Sent

Envelope Originator:

Crystal Westbrook

901B Texas Street

Denton, TX 76209

crystal.westbrook@cityofdenton.com

IP Address: 198.49.140.104

Record Tracking

Status: Original

11/20/2025 2:52:19 PM

Holder: Crystal Westbrook

crystal.westbrook@cityofdenton.com

Location: DocuSign

Signer Events

Crystal Westbrook

crystal.westbrook@cityofdenton.com

Senior Buyer

City of Denton

Security Level: Email, Account Authentication
(None)

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

Signature

Completed

Using IP Address: 198.49.140.104

Timestamp

Sent: 11/20/2025 2:56:29 PM

Viewed: 11/20/2025 2:56:40 PM

Signed: 11/20/2025 3:01:06 PM

Lori Hewell

lori.hewell@cityofdenton.com

Purchasing Manager

City of Denton

Security Level: Email, Account Authentication
(None)

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

Signature Adoption: Pre-selected Style

Using IP Address: 198.49.140.104

Sent: 11/20/2025 3:01:18 PM

Viewed: 11/20/2025 3:36:42 PM

Signed: 11/20/2025 3:38:37 PM

Leah Bush

leah.bush@cityofdenton.com

Security Level: Email, Account Authentication
(None)

Signature Adoption: Pre-selected Style

Using IP Address: 63.196.246.37

Sent: 11/20/2025 3:52:36 PM

Viewed: 11/21/2025 4:14:26 PM

Signed: 11/21/2025 5:01:12 PM

Electronic Record and Signature Disclosure:

Accepted: 11/21/2025 4:14:26 PM

ID: e970f8d4-1a5e-4dc2-9a6d-5feceadae610

Jason Reeves

jason@gageandcadeconstruction.com

Senior Vice President

Security Level: Email, Account Authentication
(None)

Signature Adoption: Pre-selected Style

Using IP Address:

2605:59c8:3d5c:7f10:a0e7:c688:6db8:85e

Signed using mobile

Sent: 11/21/2025 5:01:24 PM

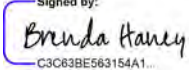
Viewed: 11/21/2025 5:46:32 PM

Signed: 11/21/2025 5:46:49 PM

Electronic Record and Signature Disclosure:

Accepted: 11/21/2025 5:46:32 PM

ID: 3769f4cb-3f4a-4b98-a936-1468a6805a05

Signer Events	Signature	Timestamp
<p>Brenda Haney brenda.haney@cityofdenton.com Director Security Level: Email, Account Authentication (None)</p>	<p><small>Signed by:</small>  <small>C3C63BE563154A1...</small></p> <p>Signature Adoption: Pre-selected Style Using IP Address: 198.49.140.10</p>	<p>Sent: 11/21/2025 5:46:59 PM Viewed: 11/24/2025 6:50:56 AM Signed: 11/24/2025 6:51:19 AM</p>

Electronic Record and Signature Disclosure:
Accepted: 11/24/2025 6:50:56 AM
ID: fc0f6b20-f0a1-4c13-b9c5-399758b4a46b

Cheyenne Defee
cheyenne.defee@cityofdenton.com
Procurement Administration Supervisor
City of Denton
Security Level: Email, Account Authentication (None)

Sent: 11/24/2025 6:51:30 AM

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

Sara Hensley
sara.hensley@cityofdenton.com
Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

Ingrid Rex
Ingrid.Rex@cityofdenton.com
Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp

Cheyenne Defee
cheyenne.defee@cityofdenton.com
Procurement Administration Supervisor
City of Denton
Security Level: Email, Account Authentication (None)

COPIED

Sent: 11/20/2025 3:01:18 PM

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

Marcella Lunn
marcella.lunn@cityofdenton.com
Senior Deputy City Attorney
City of Denton
Security Level: Email, Account Authentication (None)

COPIED

Sent: 11/20/2025 3:52:39 PM

Carbon Copy Events	Status	Timestamp
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Gretna Jones gretna.jones@cityofdenton.com Legal Secretary City of Denton Security Level: Email, Account Authentication (None)	<div>COPIED</div>	Sent: 11/24/2025 6:51:30 AM Viewed: 11/24/2025 9:03:19 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
City Secretary Office citysecretary@cityofdenton.com Security Level: Email, Account Authentication (None)		
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Arturo Garcia Arturo.Garcia@cityofdenton.com Security Level: Email, Account Authentication (None)		
Electronic Record and Signature Disclosure: Accepted: 8/6/2025 10:00:39 AM ID: df46fb8c-c5d0-4710-a20b-1eba9b4b97ce		
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	11/20/2025 2:56:29 PM
Payment Events	Status	Timestamps
Electronic Record and Signature Disclosure		

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, City of Denton (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through your DocuSign, Inc. (DocuSign) Express user account. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to these terms and conditions, please confirm your agreement by clicking the 'I agree' button at the bottom of this document.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. For such copies, as long as you are an authorized user of the DocuSign system you will have the ability to download and print any documents we send to you through your DocuSign user account for a limited period of time (usually 30 days) after such documents are first sent to you. After such time, if you wish for us to send you paper copies of any such documents from our office to you, you will be charged a \$0.00 per-page fee. You may request delivery of such paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. To indicate to us that you are changing your mind, you must withdraw your consent using the DocuSign 'Withdraw Consent' form on the signing page of your DocuSign account. This will indicate to us that you have withdrawn your consent to receive required notices and disclosures electronically from us and you will no longer be able to use your DocuSign Express user account to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through your DocuSign user account all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact City of Denton:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:

To contact us by email send messages to: purchasing@cityofdenton.com

To advise City of Denton of your new e-mail address

To let us know of a change in your e-mail address where we should send notices and disclosures electronically to you, you must send an email message to us at melissa.kraft@cityofdenton.com and in the body of such request you must state: your previous e-mail address, your new e-mail address. We do not require any other information from you to change your email address..

In addition, you must notify DocuSign, Inc to arrange for your new email address to be reflected in your DocuSign account by following the process for changing e-mail in DocuSign.

To request paper copies from City of Denton

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an e-mail to purchasing@cityofdenton.com and in the body of such request you must state your e-mail address, full name, US Postal address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with City of Denton

To inform us that you no longer want to receive future notices and disclosures in electronic format you may:

- i. decline to sign a document from within your DocuSign account, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
- ii. send us an e-mail to purchasing@cityofdenton.com and in the body of such request you must state your e-mail, full name, US Postal Address, telephone number, and account number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

Operating Systems:	Windows2000? or WindowsXP?
Browsers (for SENDERS):	Internet Explorer 6.0? or above
Browsers (for SIGNERS):	Internet Explorer 6.0?, Mozilla FireFox 1.0, NetScape 7.2 (or above)
Email:	Access to a valid email account
Screen Resolution:	800 x 600 minimum
Enabled Security Settings:	<ul style="list-style-type: none">•Allow per session cookies•Users accessing the internet behind a Proxy Server must enable HTTP 1.1 settings via proxy connection

** These minimum requirements are subject to change. If these requirements change, we will provide you with an email message at the email address we have on file for you at that time providing you with the revised hardware and software requirements, at which time you will have the right to withdraw your consent.

Acknowledging your access and consent to receive materials electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please verify that you were able to read this electronic disclosure and that you also were able to print on paper or electronically save this page for your future reference and access or that you were able to e-mail this disclosure and consent to an address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format on the terms and conditions described above, please let us know by clicking the 'I agree' button below.

By checking the 'I Agree' box, I confirm that:

- I can access and read this Electronic CONSENT TO ELECTRONIC RECEIPT OF ELECTRONIC RECORD AND SIGNATURE DISCLOSURES document; and
- I can print on paper the disclosure or save or send the disclosure to a place where I can print it, for future reference and access; and
- Until or unless I notify City of Denton as described above, I consent to receive from exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to me by City of Denton during the course of my relationship with you.